

Dear Parents and Carers,

Please find attached 2 weeks of learning to keep your child engaged in their learning over the forthcoming weeks. You will also find within the pack a copy of our curriculum overview should you wish to complete further tasks within Spring 2 with your child.

Can I remind you of daily expectations:

Reading (15-20 minutes) daily and reading records to be signed by an adult,

Times Table Rockstars,

Daily spelling practice (please find year 5/6 spellings within packs)

On returning to school please could children bring all completed learning with them, as these will need to be marked and assessed.

Many thanks,

Mrs Riley, Ms Armiger and Mrs Fey

School Curriculum Overview

Year 5 2019- 2020

Year 5	Autumn A	Autumn B	Spring A	Spring B	Summer A	Summer B
Topic	Vikings		The Indus Valley	Human and Physical Features	America	The Tudors
English Aims The overarching aim for English in the national curriculum is to promote high standards of language and literacy by equipping pupils with a strong command of the spoken and written word, and to develop their love of literature through widespread reading for enjoyment. The national curriculum for English aims to ensure that all pupils: ▮ read easily, fluently and with good understanding ▮ develop the habit of reading widely and often, for both pleasure and information ▮ acquire a wide vocabulary, an understanding of grammar and knowledge of linguistic conventions for reading, writing and spoken language ▮ appreciate our rich and varied literary heritage ▮ write clearly, accurately and coherently, adapting their language and style in and for a range of contexts, purposes and audiences ▮ use discussion in order to learn; they should be able to elaborate and explain clearly their understanding and ideas ▮ are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate.	Genres: Narrative, poetry, non-fiction, instructions and diaries. Core text: Erik the Bloodaxe sagas, Viliing Boy and Beowulf, Michael Morpurgo 'Comig Home'. Narrative- retelling the story of Beowulf using our own ideas to build on that of an author. Fact file of information researched and gathered regarding the Norsemen and Anglo-Saxons. Poetry- Christmas poems, haiku, acrostic and narrative poetry. Diaries Michael Morpurgo 'Coming home'		Genres: Newspapers , explanation writing, letter writing Context: Invasion of the Indus Civilisation artefacts on the school field we must investigate! Orientation- structure- clauses	Genres: Non-fiction texts and persuasive writing Core texts: School prospectus, atlases and encyclopaedias. Persuasive leaflet as to what makes Beaupre unique based on inclusion of human and physical features, researching structure of other sources and leaflets vs information texts. Links topic human and physical features research, gather and present information fact file non-fiction	Genres: Letters and Narratives Core text: 'An Alien story, Harry Potter and The Curse of Cogston House' Comparing famous American vs British science topic space. links Topic/ History and Geography/ Music America as composed piece of music called 'Planets' links to science space as Neil Armstrong was the first man on the moon.	Genres: playscripts, recount, narrative, poetry Core texts: The play of Henry VIII, online research, The murder of Charlotte Dymond, Lochinvar. Playscript- writing own based on class assembly and ideas of other authors. Recount/ narrative- the beheading of Ann Bolyn, (collaborative Year 6) Poetry- creating own Tudor poem based on ideas of another author.
	Mathematics Aims The national curriculum for mathematics aims to ensure that all pupils: ▮ become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. ▮ reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language ▮ can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.	Number and place value Statistics Number multiplication and division Area and Perimeter Measures volume Consolidation Number – Place Value Read, write, order and compare numbers to at least 1000000 and determine the value of each digit. Count forwards or backwards in steps of powers of 10 for any given number up to 1000000. Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero. Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000 Solve number problems and practical problems that involve all of the above. Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. Number- Addition and Subtraction Add and subtract numbers mentally with increasingly large numbers. Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Statistics Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables including timetables.	Number addition and subtraction Statistics Number multiplication and division Area and Perimeter Measures volume Consolidation Number – Place Value Read, write, order and compare numbers to at least 1000000 and determine the value of each digit. Count forwards or backwards in steps of powers of 10 for any given number up to 1000000. Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero. Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000 Solve number problems and practical problems that involve all of the above. Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. Number- Addition and Subtraction Add and subtract numbers mentally with increasingly large numbers. Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Statistics Solve comparison, sum and difference problems using information presented in a line graph. Complete, read and interpret information in tables including timetables.	Number multiplication and division Fractions Number Multiplication and Division Multiply and divide numbers mentally drawing upon known facts. Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for 2 digit numbers. Divide numbers up to 4 digits by a one digit number using the formal written method of short division and interpret remainders appropriately for the context. Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign. Number: Fractions Compare and order fractions whose denominators are multiples of the same number. Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths. Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 4/5= 6/5= 1 1/5] Add and subtract fractions with the same denominator and denominators that are multiples of the same number. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. Read and write decimal numbers as fractions [for example 0.71 = 71/100Solve problems involving number	Fractions Number decimals and percentages Consolidation Number: Fractions Compare and order fractions whose denominators are multiples of the same number. Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths. Recognise mixed numbers and convert improper fractions and convert from one form to the other and write mathematical statements >1 + = 1] Add and subtract fractions with the same denominator and denominators that are multiples of the same number. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. Read and write decimal numbers as fractions [for example 0.71 = 71/100Solve problems involving number up	Decimals Geometry property of shape Identify 3D shapes, including cubes and other cuboids, from 2D representations. Use the properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. Number: Decimals Solve problems involving number up to three decimal places. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. Solve problems involving converting between units of time.

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| | Sc5/3.1f explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. | Vikings- sketch, runes and portraits
links Vikings/ art/ literacy/ DT/ Geography and history
Designing shields and weapons, testing strongest materials for construction, building long ship for Erik the Blood axe.
to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]
Viking portraits, hatching, writing Viking letters in runes. | findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations

Sc5/1.6 identifying scientific evidence that has been used to support or refute ideas or arguments. | The Indus Valley- links Topic, History of ancient civilisation/ artefacts, way of life/ computing research to gather information on common artefacts tottem poles sculpt/ desim./ sketch their identity as a totem pole)

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School Curriculum Overview

Year 5 2019- 2020

Geography Aims The national curriculum for geography aims to ensure that all pupils: - develop contextual knowledge of the location of globally significant places – both terrestrial and marine – including their defining physical and human characteristics and how these provide a geographical context for understanding the actions of processes - understand the processes that give rise to key physical and human geographical features of the world, how these are interdependent and how they bring about spatial variation and change over time - are competent in the geographical skills needed to: - collect, analyse and communicate with a range of data gathered through experiences of fieldwork that deepen their understanding of geographical processes - interpret a range of sources of geographical information, including maps, diagrams, globes, aerial photographs and Geographical Information Systems (GIS) - communicate geographical information in a variety of ways, including through maps, numerical and quantitative skills and writing at length.	materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design		systems in their products [for example, gears, pulleys, cams, levers and linkages] - understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] - apply their understanding of computing to program, monitor and control their products. use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups - generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	against their own design criteria and consider the views of others to improve their work - understand how key events and individuals in design and technology have helped shape the world use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups - generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	their own design criteria and consider the views of others to improve their work - understand how key events and individuals in design and technology have helped shape the world use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups - generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
The Vikings links Vikings/ art literacy/ DT/ Geography and history Designing shields and weapons, testing strongest materials for construction, building long ship for Erik the Blood axe. Exploring countries around Europe and tracking Erik's journey and conquering. use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied - use the eight points of a compass, four and six-figure grid references, symbols and key (including the use of Ordnance Survey maps) to build their knowledge of the United Kingdom. Describe and understand key aspects of: - human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water - physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle.	The Vikings links Vikings/ art literacy/ DT/ Geography and history Designing shields and weapons, testing strongest materials for construction, building long ship for Erik the Blood axe. Exploring countries around Europe and tracking Erik's journey and conquering. use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied - use the eight points of a compass, four and six-figure grid references, symbols and key (including the use of Ordnance Survey maps) to build their knowledge of the United Kingdom. Describe and understand key aspects of: - human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water - physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle.	The Indus Valley use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied - human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water - physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle. Links computing research trade, food and climate zones- comparisons. Links art and DT land use and settlement designing totem poles- History exploring ancient civilisations.	Human and physical features links topic human and science- human features children to test shapes and strength, history of bridges design, build, evaluate, test. use fieldwork to observe, measure, record and present the human and physical features in the local area using a range of methods, including sketch maps, plans and graphs, and digital technologies. Locate the world's countries, using maps to focus on Europe (including the location of Russia) and North and South America, concentrating on their environmental regions, key physical and human characteristics, countries, and major cities name and locate counties and cities of the United Kingdom, geographical regions and their identifying human and physical characteristics. Key topographical features (including hills, mountains, coasts and rivers), and land-use patterns, and understand how some of these aspects have	America- links Topic/ History and Geography/ Music America as composed piece of music called 'Planets' links to science space as Neil Armstrong was the first man on the moon. understand geographical similarities and differences through the study of human and physical geography of a region of the United Kingdom, a region in a European country, and a region within North or South America	The Tudors Links Trip Strangers Hall locality exploring local area and the rebellion took place in Norwich.

School Curriculum Overview

Year 5 2019- 2020

changed over time				
History Aims The national curriculum for history aims to ensure that all pupils: - know and understand the history of these islands as a coherent, chronological narrative, from the earliest times to the present day; how people's lives have shaped this nation and how Britain has influenced and been influenced by the wider world - know and understand significant aspects of the history of the wider world: the nature of ancient civilisations; the expansion and dissolution of empires; characteristic features of past non-European societies; achievements and follies of mankind - gain and deploy a historically grounded understanding of abstract terms such as 'empire', 'civilisation', 'parliament' and 'peasantry' - understand historical concepts such as continuity and change, cause and consequence, similarity, difference and significance, and use them to make connections, draw contrasts, analyse trends, frame historically-valid questions and create their own structured accounts, including written narratives and analyses - understand the methods of historical enquiry, including how evidence is used rigorously to make historical claims, and discern how and why contrasting arguments and interpretations of the past have been constructed - gain historical perspective by placing their growing knowledge into different contexts, understanding the connections between local, regional, national and international history; between cultural, economic, military, political, religious and social history; and between short- and long-term timescales.	Viking, Anglo-Saxons, links Vikings/ art/ literacy/ DT/ Geography and history Designing shields and weapons, testing strongest materials for construction, building long ship for Erik the Blood axe. History of the Viking invasion Roman withdrawal from Britain in c. AD 410 and the fall of the western Roman Empire - Scots invasions from Ireland to north Britain (now Scotland) - Anglo-Saxon invasions, settlements and kingdoms: place names and village life - Anglo-Saxon art and culture - Christian conversion – Canterbury, Iona and Lindisfarne. Viking raids and invasion and resistance by Alfred the Great and Athelstan, first king of England - further Viking invasions and Danegeld - Anglo-Saxon laws and justice - Edward the Confessor and his death in 1066	The Indus Valley the achievements of the earliest civilizations – an overview of where and when the first civilizations appeared and a depth study of one of the following: Ancient Sumer; The Indus Valley; Ancient Egypt; The Shang Dynasty of Ancient China Links computing gaining research time line, art and design land use and totem poles, international history, science states of matter exploring the river links science and geography.	Human and physical features links topic human and physical features/ art/ science- human feature children to test shapes and strength, history of bridges, design, build, evaluate, test.	America- links Topic/ History and Geography/ Music America as composed piece of music called 'Planets' links to science space as Neil Armstrong was the first man on the moon. a non-European society that provides contrasts with British history – one study chosen from: early Islamic civilization, including a study of Baghdad c. AD 900; Mayan civilization c. AD 900; Benin (West Africa) c. AD 900-1300. Modern cultures and comparisons with the UK- Independence, government systems, famous figures, monuments
	Edward Grieg - appreciate and understand a wide range of high-quality live and recorded music drawn from different traditions and from great composers and musicians - develop an understanding of the history of music. Christmas songs in preparation for school production	Hindu music is music created for or influenced by Hinduism. It includes Indian classical music, Kiritan, Bhajan and other musical genres use and understand staff and other musical notations appreciate and understand a wide range of high-quality live and recorded music drawn from different traditions and from great composers and musicians	Gustav Holst listen with attention to detail and recall sounds with increasing aural memory. Links music planets/ sciences- forces as space is a force/ human and physical features as planets are physical features and yet humans have visited, investigated.	Who was Jesus? Depiction through song, gospel, soul, hymns, slavery songs, history. develop an understanding of the history of music. appreciate and understand a wide range of high-quality live and recorded music drawn from different traditions and from great composers and musicians Links RE discussing 10 commandments and their relevance in modern society- do hymns and gospels keep them relevant?
				Sports day Swimming
				Are the 10 commandments still relevant?
Physical Education				Christianity Who people say that I am? (Jesus explored through art)
Religious Education	Beliefs and actions in the world What key beliefs influence people's faith and how do people live out their lives? How has religion influenced St Ives?	Hinduism What can stories and images of deities tell us about Hindu physical features- natural	How and why do 'religions' help the poor? Fundraising/aid Links- topic geography human and physical features- natural	

School Curriculum Overview

Year 5 2019- 2020

PSHE The national curriculum for citizenship aims to ensure that all pupils: It acquire a sound knowledge and understanding of how the United Kingdom is governed, its political system and how citizens participate actively in its democratic systems of government It develop a sound knowledge and understanding of the role of law and the justice system in our society and how laws are shaped and enforced It develop an interest in, and commitment to, participation in volunteering as well as other forms of responsible activity, that they will take with them into adulthood It are equipped with the skills to think critically and debate political questions, to enable them to manage their money on a day-to-day basis, and plan for future financial needs.	Detectives – shop fronts, food, street names, art, statues etc links Vikings/ art/ literacy/ DT/ Geography and history Designing shields and weapons, testing strongest materials for construction, building long ship for Erik the Blood axe. Children to explore beliefs and religions of the Vikings and compare. Conflict resolution	Citizenship Links topic- what it meant to be a citizen in the Indus Valley comparisons to citizenship in modern times.	Citizenship	disasters/ human disasters how can we support people effected and protect world.	
SEAL Languages The national curriculum for languages aims to ensure that all pupils: understand and respond to spoken and written language from a variety of authentic sources speak with increasing confidence, fluency and spontaneity, finding ways of communicating what they want to say, including through discussion and asking questions, and continually improving the accuracy of their pronunciation and intonation can write at varying length, for different purposes and audiences, using the variety of grammatical structures that they have learnt discover and develop an appreciation of a range of writing in the language studied	Conflict resolution Phonics recapping of alphabet Journeys to school referring to the 5 senses Describe people and places Reading, writing, listening and oral opportunities. Describe items found within the class room making preferences and opinions to specific subjects	What it means to be a citizen Food and drink preferences Numbers to 100	Citizenship Explaining and understanding plurals masculine/feminine and neuter. Reading comprehensions- where I lives including oral conversations and writing	Sex Education Discussing seasons and describing the changing weather in those seasons justifying with preference. To appreciate songs, rhymes, stories and poems To answer questions and to ask questions To write and orally produce sentences from memory.	Relationships including friendships Relationships including friendships Discussing seasons and describing the changing weather in those seasons justifying with preference. To appreciate songs, rhymes, stories and poems To answer questions and to ask questions To write and orally produce sentences from memory.

Spelling

Year 5 and 6 Statutory Spellings

accommodate	category	determined	forty	marvellous	programme	soldier
accompany	cemetery	develop	frequently	mischievous	pronunciation	stomach
according	committee	dictionary	government	muscle	queue	sufficient
achieve	communicate	disastrous	guarantee	necessary	recognise	suggest
aggressive	community	embarrass	harass	neighbour	recommend	symbol
amateur	competition	environment	hindrance	nuisance	relevant	system
ancient	conscience	equipment	identity	occupy	restaurant	temperature
apparent	conscious	equipped	immediate	occur	rhyme	thorough
appreciate	controversy	especially	immediately	opportunity	rhythm	twelfth
attached	convenience	exaggerate	individual	parliament	sacrifice	variety
available	correspond	excellent	interfere	persuade	secretary	vegetable
average	criticise	existence	interrupt	physical	shoulder	vehicle
awkward	curiosity	explanation	language	prejudice	signature	yacht
bargain	definite	familiar	leisure	privilege	sincere	
bruise	desperate	foreign	lightning	profession	sincerely	

Reading

How Weeds Get Everywhere!

How come weeds get everywhere in our gardens? One minute your lawn can be lovely and green and the next minute it's covered - and I mean covered - in dandelions! Well, it's all to do with the clever way that plants reproduce and spread their seeds far and wide to keep their species alive.

Making the Seeds

So, how do the plants make so many seeds?

Most plants are made up of some female and male plant parts. Bees and other insects are attracted to the flowers because of their lovely smells and colours. While they are at the flower, they help move pollen around to fertilise the plant. Sometimes even the wind can help with moving the pollen around to the right places.

Once the plant is fertilised, the seeds can grow. When this happens in a dandelion, the yellow flower turns into what we call a dandelion 'clock'. If you look closely at a dandelion clock (also called a 'seed head'), it is full of dark coloured seeds with light, feathery, white tops that look like umbrellas.



Fact File

- A weed is only a plant that someone does not want in their garden. They can be very pretty!
- Nettles are used for making tea and medicines, so they are actually very useful.
- The world's largest weed is giant hogweed. It can grow up to 3.65m in height and have leaves that measure 91cm long.
- Some people think that if you hold a buttercup under your chin and the yellow reflects on your skin it means that you like butter.

Spreading the Seeds

So, how do the seeds get everywhere?

This is the clever bit...

As we said before, dandelions make lots and lots of seeds. They all have feathery, white tops that look like umbrellas. This makes the seeds brilliant at floating and flying through the air. So, all they need is the wind to carry them near and far. Before you know it, there are hundreds of seeds all over your lawn, which are all ready to germinate and make yet more dandelions. Other flowers and plants also have other clever ways of spreading their seeds, including putting them inside tasty fruit so that animals eat them. Eventually, the seeds come out of the other end in their poo and start to germinate.

Questions about How Weeds Get Everywhere!

1. Name the world's largest weed.

2. Name something mentioned in this text, other than bees and other insects, that can move pollen around in the flower.

3. What is another name for a dandelion 'clock'?

4. What is a good thing that nettles can be used for?

5. What makes dandelion seeds good at floating in the air?

6. Name another way mentioned in this text, apart from the wind, that seeds can be spread around to germinate in other places.

7. How tall can the largest weed grow?

8. What does 'germinate' mean in the final paragraph?

9. In paragraph one, the author has written the contracted word **it's**. Write the full words without the apostrophe.

10. In the first paragraph, what does the word 'reproduce' mean?

Answers about How Weeds Get Everywhere!

Answers

1. What is the name the world's largest weed?

Giant hogweed

2. Name something mentioned in this text, other than bees and other insects, that can move pollen around in the flower.

Wind

3. What is another name for a dandelion 'clock'?

Seed head

4. What is a good thing that nettles can be used for?

Making tea or medicine

5. What makes dandelion seeds good at floating in the air?

Accept any reference to them being; light, feathery, like an umbrella.

6. Name another way mentioned in this text, apart from the wind, that seeds can be spread around to germinate in other places.

Animal poo

7. How tall can the largest weed grow?

3.65m / 3.65 metres.

8. What does 'germinate' mean in the final paragraph?

Start to grow from a seed

9. In paragraph one, the author has written the contracted word it's. Write the full words without the apostrophe.

It is

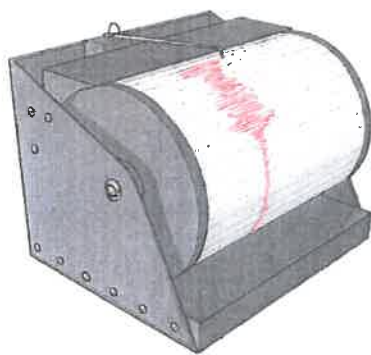
10. In the first paragraph, what does the word 'reproduce' mean?

To make more of / make another one / produce offspring.

Earthquakes

The Earth's Crust

The Earth's crust and the top of the mantle have about twenty tectonic plates, which are like jigsaw puzzle pieces covering the Earth. These plates are always moving and bumping into each other. We call the edges of the plates 'plate boundaries', which are made up of faults. These faults are where most of the world's earthquakes occur. As the plates move, the edges get stuck because they are not smooth, but the rest of the plate keeps moving. When the force is too much, it slips and bumps and that causes an earthquake.



Seismograph

A seismograph (say: size-mo-graf) is a special piece of equipment that records earthquakes. Seismometers are securely fastened to the Earth, so when the ground starts to shake, the instrument's case moves too. What doesn't move is a weight that hangs on a string inside the case. When there is an earthquake, the case shakes with the ground but the weight does not, and it draws a line to show how much the ground shook. Scientists use seismograms (graphs produced by the seismograph) to measure how big each earthquake is.

Interesting Fact

Six Italian scientists were convicted of manslaughter (killing someone without planning or being hateful) and sent to prison for not predicting (knowing it was coming and warning people) the 2009 L'Aquila earthquake in which 309 people died. They argued against their cases and won, so were eventually not sent to prison.

You could try to find out:

- 1 How earthquakes are measured.
- 2 How easy they are to predict.
- 3 About other cases where prison sentences have been handed out in unusual circumstances.
- 4 How you go about arguing a decision made by a court.

Questions About Earthquakes

1. Which layer of the Earth do the tectonic plates make up and how many are there?

They make up...

2. What are plate boundaries?

Plate boundaries are...

3. Where in the world do earthquakes take place?

Earthquakes take place...

4. Describe what causes earthquakes.

Earthquakes are caused by...

5. Which part of the seismograph moves? The case or the weight on a string?

The part of the seismograph that moves is...

Questions About Earthquakes

Answers

- 1. Which layer of the Earth do the tectonic plates make up and how many are there?**

They make up the Earth's crust and there are about twenty.

- 2. What are plate boundaries?**

Plate boundaries are the edges of the Earth's tectonic plates.

- 3. Where in the world do earthquakes take place?**

Any answer that suggests: Earthquakes take place within faults / areas where the plate boundaries meet.

- 4. Describe what causes earthquakes.**

Any answer that suggests: Earthquakes are caused by the plates rubbing against each other and getting stuck before coming free with a large force/jolt.

- 5. Which part of the seismograph moves? The case or the weight on a string?**

The part of the seismograph that moves is the case.

Rainforest Deforestation

Rainforests are an essential part of our planet, providing oxygen, absorbing carbon dioxide and housing 50% of the animal and plant species of the planet. Not to mention, the medicines and cures that are made using plants only found in a rainforest environment.

Deforestation

Deforestation is the name given to the destruction of the rainforests and this is being done by burning them, chopping down the trees, or in some cases, flooding the areas. This is happening so fast that an area the size of twenty football pitches is being destroyed every minute! If the current rate of deforestation continues, it will take less than a hundred years to destroy all the rainforests on Earth.



Fact File in Numbers

- 20% of the world's oxygen is produced in the Amazon forest.
- 28,000 species of animals are expected to become extinct in the next 25 years due to deforestation.
- $\frac{1}{2}$ of the tropical rainforests that we had have already gone.

Why are they being destroyed?

The biggest reason rainforests are cleared is to make space for food, including cattle to be farmed for cheap beef and also growing large crops, such as soya beans and palm oil. In addition, other causes of deforestation, which are also related to making money include; chopping down and using the wood from the forest, building roads for mining metals, gold or diamonds, flooding areas to make dams to generate electricity and also digging for oil.

How can they be saved?

There are plenty of charities fighting against deforestation and people can always help by raising money for those charities. Also, think about the reasons that the forests are being destroyed and how some little changes in your everyday habits could help. For example, the cheap beef farmed in the areas that used to be rainforest land is often used in fast food chains. Could you avoid eating fast food from these outlets? You could also check on your supermarket food labels for the country of origin of any meat you buy. Was it farmed in an area where deforestation is taking place? You could also use rainforest-friendly wood so you know it is not a by-product of deforestation. Finally remember, paper comes from trees so any paper saving you can do, as well as recycling, will help the environment.

Questions about Rainforest Deforestation

1. Name a reason not to destroy rainforests given in the first paragraph.

2. Name **two** of the three ways given that a rainforest can be destroyed.

3. What **percentage** of the rainforests has already gone?

4. In the fact file, what does the author say will happen in the next quarter of a century?

5. Why does saving paper help the rainforests?

6. Why has the author used an exclamation mark in paragraph two?

7. What **fraction** of the earth's plant and animal species live in the rainforests?

8. List **two** main reasons why deforestation is occurring.

9. Which rainforest produces 20% of the world's oxygen?

10. What is your opinion about deforestation? How could you help to stop it?

Questions about Rainforest Deforestation

Answers

1. Name a reason not to destroy rainforests given in the first paragraph.
Any from: medicines, cure for cancer, 50% of animal and plant species live there, gives out oxygen, absorbs carbon dioxide.
2. Name two of the three ways given that a rainforest can be destroyed.
Any from: burning, chopping down, flooding.
3. What percentage of the rainforests has already gone?
50% (it says 1/2 in the text).
4. In the fact file, what does the author say will happen in the next quarter of a century?
(28,000) species of animals will become extinct (the text says twenty-five years).
5. Why does saving paper help the rainforests?
Paper is made from wood (making it also causes more carbon footprint).
6. Why has the author used an exclamation mark in paragraph two?
The rate of destruction is surprising (discuss this).
7. What fraction of the earth's plant and animal species live in the rainforests?
1/2 (the text says 50%).
8. List two main reasons why deforestation is occurring.
Any two from: Food: Cheap beef, or agricultural crops including soya or palm oil, using the wood, building roads for mining, generating electricity or digging for oil.
9. Which rainforest produces 20% of the world's oxygen?
The Amazon Rainforest.
10. What is your opinion about deforestation? How could you help to stop it?
Open ended for discussion. Answers could discuss raising money for charities, making different choices about food and conserving paper.

Planet Earth

We all live on Earth...why? Well, Earth is the only planet in our solar system that has all the things we need to survive: 21% oxygen in the air to breathe, water to drink and all at just the right temperature warmed by the Sun. Its name comes from the Old English word 'ertha' and the Anglo-Saxon word 'erda' which means ground or soil.

The Blue Planet:

Earth, the third planet from the Sun, is referred to as 'The Blue Planet' because of how it looks from space – blue. This is due to the fact that over $\frac{2}{3}$ of the Earth's surface is covered in water.



Did you know?

Age: approximately 4.54 billion years

Diameter: 13,000 km

Distance to Sun: 150,000,000 km

Surface Temperature: 15°C

Highest point: Mount Everest 8.8 km

Lowest point: Challenger Deep 10.9 km below sea level

I'm Spinning Around:

The Earth spins on its axis once every 24 hours – that's what gives us day and night as we spin to face the Sun and then away from it again. You wouldn't notice but the Earth's spin is actually slowing down by 17 milliseconds per hundred years. Eventually this will lengthen our days but it will take around 140 million years before our day will have increased from 24 to 25 hours. I wonder if children 140 million years from now will have an extra hour at school.

Whilst it is spinning, the Earth is also orbiting The Sun, which takes 365 $\frac{1}{4}$ days to do one full circuit. This gives us the length of our years. Our seasons are also dependent on the orbit of the Earth as our planet is tilted at an angle. This means that around one side of the Sun we are tilted towards it – giving us warmer temperatures and longer days...our summer. However, around the other side of the Sun we are tilted away from it giving us less light and cooler temperatures – this is our winter. All in all, it's a pretty amazing planet and I, for one, am glad to call it home.

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Questions About Planet Earth

1. What percentage of Oxygen is in the air we breathe?

2. What is the highest thing on Earth?

3. How long does it take the Earth to spin once on its axis?

4. Will the Earth always spin at this speed? If not, how will it change?

5. How many planets are between us and the Sun and can you name them?

6. Why do we experience summer around one side of the Sun?

7. Why is Earth also called 'The Blue Planet'?

8. What 3 things make it possible for us to survive on Earth?

9. Why do we need to add an extra day to our year every 4 years?

10. Which fact or piece of information has amazed you the most and why?

Questions About Planet Earth

Answers

1. What percentage of Oxygen is in the air we breathe?

21%

2. What is the highest thing on Earth?

A mountain (the question asks 'what thing')

3. How long does it take the Earth to spin once on its axis?

24 hours/1 day

4. Will the Earth always spin at this speed? If not, how will it change?

No – it is slowing down

5. How many planets are between us and the Sun and can you name them?

2 (Mercury and Venus)

6. Why do we experience summer around one side of the Sun?

The Earth is tilted towards The Sun

7. Why is Earth also called 'The Blue Planet'?

Water makes up 2/3 of the surface so it looks blue from space.

8. What 3 things make it possible for us to survive on Earth?

Water, air (or oxygen), warmth

9. Why do we need to add an extra day to our year every 4 years?

Due to the fact we have an extra ¼ day every year we orbit the Sun

10. Which fact or piece of information has amazed you the most and why?

Open ended to discuss.

Recycle Week

What is Recycle Week?

Recycle Week is an annual event (usually in June) which has been running since 2004. It is a time to remind people of all the things that can be recycled. Each year has a theme, for example: The Unusual Suspects - common household items that often get forgotten about, and instead of being recycled, they are thrown away. These include items such as containers, shampoo and conditioner bottles, bleach bottles, tissue boxes and deodorant cans.



What is recycling?

Recycling is when objects made from glass, steel, paper, cardboard, certain plastics and even waste food, are taken to a recycling plant and turned into other things. Therefore, they are used again, recycled into something else and not just thrown away into a landfill.



Why is it important to recycle?

It is important to recycle for these reasons:

1 Recycling conserves resources

When we recycle, used materials are made into new products, reducing the need to use natural resources. Natural resources come straight from the earth, so if we recycle products that are already made, we reduce the need to use fresh, raw material through mining and forestry.

2 Recycling saves energy

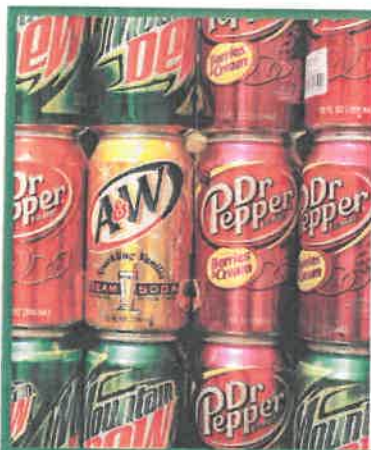
Using recycled materials in the manufacturing process uses a lot less energy than is needed for making new products from raw materials – even when you think of all the extra costs, like transport.

3 Recycling helps to protect the environment

Recycling reduces the need for mining materials from the ground. Changing these raw materials from one thing into another creates a large amount of air and water pollution.

4 Recycling reduces landfill

Landfill sites are huge areas where rubbish that isn't recycled is dumped. They need a lot of space. The rubbish takes years to rot and while it is doing that, these sites give off methane, a powerful and dangerous greenhouse gas. There are over 1,500 landfill sites in the UK.



Did you know?

- Both metal and glass can be recycled again and again without loss of quality.
- If we recycle all the steel packaging we use in a year, it would save enough energy to make over 50,000 return train journeys between London and Edinburgh!
- Recycling one drinks can could save enough energy to power a TV for four hours.

Other recycled materials

Clothing and textiles can be recycled: bedding, old underwear, damaged clothing and faded curtains can be recycled and made into new items, such as padding for chairs and car seats, cleaning cloths and blankets.

- Check to see if your council collects clothes and textiles to be recycled.
- Some charities collect clothing and textiles for recycling, check with your local store or on the bags that come through the door.
- Clothing and textile banks are often in supermarkets and local car parks - check to see if they take items for recycling.

Foods that can be recycled are: peelings, tea bags, bread, pastries, out of date food, rice, pasta, beans, meat, fish and waste food left on plates. It can then be used as fertilizer on farms.

How can we recycle?

Whenever we use a plastic or glass container, we need to wash it out and put it in a separate bag from our other rubbish. Then put the recycling items into a blue wheelie bin or take it to a recycling collection point, and that's it! We can all do our bit to help the planet and save the environment for generations to come.



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Questions About Recycle Week

1. In your own words, explain what Recycle Week is.

2. What objects do people often forget about?

3. What does the phrase '**reducing the need to use natural**' mean?

4. Explain your understanding of why recycling helps to protect the environment?

5. Would you want to live near a landfill site? Explain your reason.

6. Why are glass and steel suitable for being recycled many times?

7. What can you do to recycle clothes and textiles?

8. Name two more textiles that could be recycled.

9. How would you try and persuade people to recycle?

10. Write a set of instructions to tell people how they can recycle one item.

Questions About Recycle Week

Answers

1. In your own words, explain what Recycle Week is.

Own explanation

2. What objects do people often forget about?

People often forget shampoo bottles, conditioner bottles, tissue boxes, bleach bottles and deodorant cans.

3. What does the phrase 'reducing the need to use natural ' mean?

It means the need to use natural materials is less.

4. Explain your understanding of why recycling helps to protect the environment?

Recycling helps to protect the environment because changing the raw materials into something else pollutes the air and water.

5. Would you want to live near a landfill site? Explain your reason.

No, I wouldn't like to live near a landfill site because it would be smelly /dirty/ dangerous gas given off.

6. Why are glass and steel suitable for being recycled many times?

Glass and steel are suitable to be recycled because they don't lose their quality.

7. What can you do to recycle clothes and textiles?

I could take clothes and textiles to a charity shop/ supermarket recycling point/ put them in a charity bag on your doorstep.

8. Name two more textiles that could be recycled.

Other textiles that could be recycled are rugs, pillow cases, scarves, towels etc.

9. How would you try and persuade people to recycle?

Recycling is important because it saves energy, the environment, resources and
Own response

10. Write a set of instructions to tell people how they can recycle one item.

- a. **Decide if it can be recycled.**
- b. **Wash the container out.**
- c. **Put it in a recycling bag.**
- d. **Take it to a recycling point or put it in the blue wheelie bin.**

7. How must it have felt to be living in London at this time? Explain your answer using as much detail as possible, and remember to use evidence from the text.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper appears to be a standard notebook page.

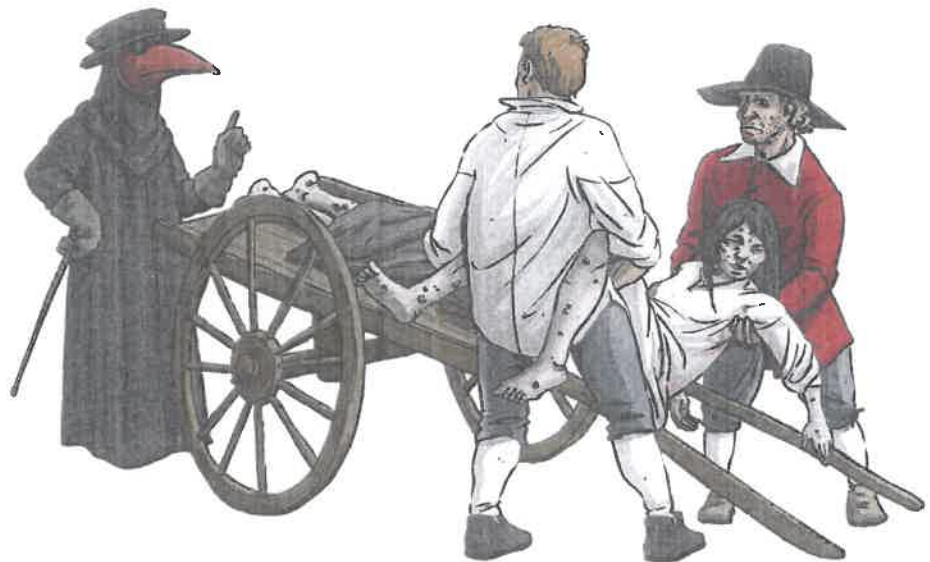
Answers

1. Why was the plague so frightening to people?
The plague was frightening as there was no cure and for many it meant certain death.
2. What reasons could there be, for there being no cure for the Great Plague?
The reasons why there was no cure are that the doctors did not know as much about medicine and diseases as we do now. Also the conditions were unhygienic, and this makes it hard to treat disease.
3. How did people try to prevent themselves from catching the plague?
Many tried holding small bunches of flowers to their noses, to stop themselves from breathing in bacteria. Some people wore lucky charms, such as a dead toad around their necks
4. Why might the fact that many cats and dogs were killed, have actually helped the outbreak to spread further?
Cats and dogs were predators of rats, so therefore there were less animals to kill the rats. This meant their population grew, so there were more rats to spread disease.
5. Why do you think houses with the plague were sealed, even though it meant the families inside would die without help? **The houses were sealed because there was no other way to stop the disease from spreading. By keeping those infected inside and unable to have contact with others, it was hoped the disease would stop being spread.**
6. What does rat-infested mean?
Rat-infested means that the buildings has been taken over by rats. The buildings were overrun with rats.
7. How was the plague eventually controlled and stopped?
The cold weather killed many of the rats and fleas, who were the cause of the plague, as well as killing bacteria. Also the Great Fire of London destroyed many rat-infested buildings, killing more rats.
8. How must it have felt to be living in London at this time? Explain your answer using as much detail as possible, and remember to use evidence from the text.
Various answers, but answers must refer to the sense of fear and the unknown. Also the sadness and despair at seeing so many people falling victim to the plague. Some answers may discuss how doctors must have felt helpless and frustrated that there was so little they could do to help people.

The Great Plague

What was the Great Plague?

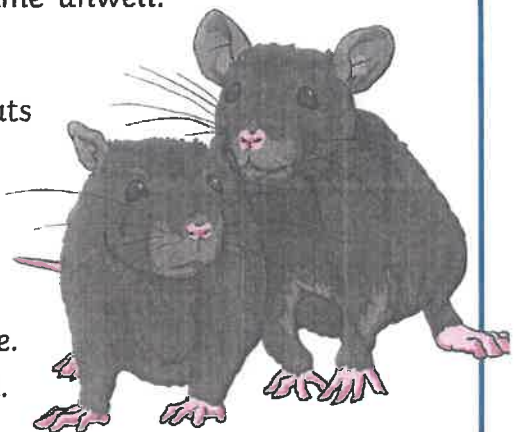
During the summer of 1665, London was rocked by a horrific disease, which became known as the Great Plague. Despite the fact that there had been an outbreak of the plague (the Black Death) 300 years before this, there was still no cure. For this reason, people were terrified of the plague as they were aware that, for many, it meant certain death. 1665 was during the seventeenth century and at this time, medicine and health care were very different than they are today. Hygiene was often very poor; towns and villages could be dirty and unsanitary. Also, medical knowledge was limited and this explains why the plague caused so much destruction.



How the plague spread

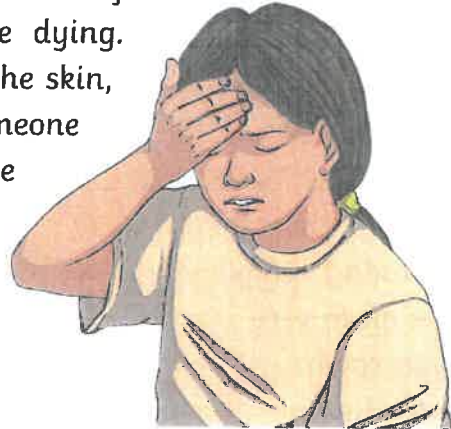
There were many concerns about how the plague was spread. It was hoped that if the cause of the plague could be found, it could be better controlled or stopped. Some doctors felt that poisonous or bad air was to blame. As people continued to breathe it in, they became unwell. Others blamed farm animals.

However, the cause of the plague was rats. Rats carried bacteria, which was spread to people by flea bites. When people sneezed and coughed, they spread the disease even more. The Mayor of London believed that domestic animals, such as dogs and cats were to blame. He ordered that these animals were destroyed.



What happened if someone caught the plague?

The plague spread extremely quickly, and within a few days of contracting the disease, people were dying. The infected suffered from painful swelling of the skin, blisters, headaches, fever and vomiting. If someone from a household contracted the plague, the whole house was sealed. A red cross was marked on the front door of any houses where somebody had the plague, along with the words 'Lord have mercy on us'. Historians believe that 100 000 people died in London by the end of 1665.



How was the plague stopped?

In the autumn of 1666, the weather was particularly cold. This killed off many of the rats and fleas which were spreading the virus, as well as reducing the spread of bacteria. Also, the Great Fire of London, in the same year, which destroyed thousands of homes and buildings, also helped to stop the plague. The fire spread rapidly due to the fact that the houses were so close together and made of wood. The fire destroyed many rat-infested buildings, severely reducing the rat population.



Plague Remedies

As there was no cure, people tried alternative remedies to try to prevent them from contracting the plague.

- **Small bunches of flowers:** people thought that holding them to their noses, would stop them from breathing in any bad air or bacteria.
- **Lucky charms:** people wore them to ward off the plague, one example is wearing a dead toad around the neck!
- **Soaking money in vinegar:** when paying for goods, money was soaked in vinegar before giving it to someone else.

Questions

1. Why were people so terrified of the plague?

2. What reason might people have expected there to be a cure by 1665?

3. What do you think it means that houses were sealed when somebody caught the plague?

4. Why might the fact that many cats and dogs were killed have actually helped the outbreak to spread further?

5. What does the phrase 'medical knowledge was limited and it was not known how to cure many diseases' mean?

6. Why do you think houses with the plague were sealed, even though it meant the families inside would die without help?

Art

Art

Week 1: Collect some sustainable items from the local area and gardens. Begin to design and form your Andy Goldsworthy piece of art.

Week 2: using the resources you collected from last week. Create your own Andy Goldsworthy piece using sticks, leaves and other foliage. Record with a photography.

Literacy

Week 1:

Monday: Research the positives and negatives to the building of incinerators. Suggest your view point and explain your thoughts.

Tuesday: create an informative poster to members of the public about the pros and cons of using incinerators to exterminate waste.

Wednesday: Research the building of the Wisbech incinerator find out what, where, when, why, and how planning and waste companies feel this could benefit Wisbech. What are the newspapers saying? Have a read and note your ideas using bullet points.

Thursday: create an information leaflet to give out to members of the public regarding the Wisbech incinerator, use sub-headings to organise, hyperboles to exaggerate language, pictures and formal language to captivate your reader.

Friday: Create a fact file to form a whole class encyclopedia regarding the power of recycling and the lack of need for the incinerator to be built.

Week 2:

Monday: using your recyclable items how many different and creative useful items can you create? Record your ideas with a photography to share on your return!

Tuesday: Select your favorite item and write your own instructions as to how you made it, using skills taught in class.

Wednesday: create a persuasive poster to encourage consumers to buy your recycled product- Extension could you write a rap to promote your product further.

Thursday: write a letter to 'Dragons Den' explaining what is the inspiration behind your product? Why do we need recycled products? What makes your item unique? Why should they invest?

Friday: Research and create a fact file for a human feature around the world to form a class encyclopedia. This could include the great wall of china, the Sydney opera house, Big Ben, Tower of London.

Science

Investigating levers

Outstanding Science Year 5 - Forces - OS5E006

Learning Objective

I can explain how a lever works.



Me: 





































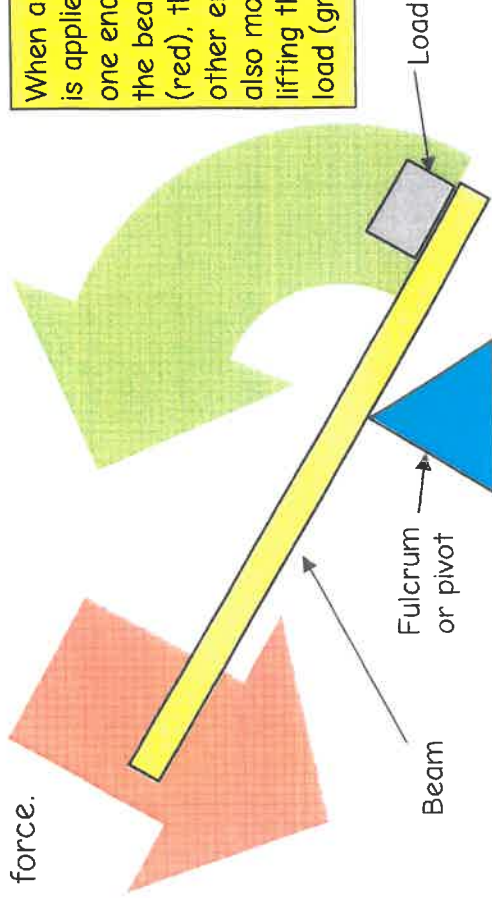
Scientific play

Take a ruler, pencil and two coins of different weights. Place the ruler on the pencil and place the coins at either end. Can you make the ruler balance?

Levers

A lever is one of the oldest and simplest machines used by humans. A lever consists of just two parts - a beam (the long part) and a fulcrum or pivot (hinge). The beam rotates (turns) along the fulcrum. Levers are useful because they allow humans to lift heavy weights by applying a smaller force.

When a force is applied at one end of the beam (red), the other end also moves, lifting the load (green).



National Curriculum Statutory Requirements

SE3 - recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect; UKS2W2 - taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate; UKS2W3 - recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs

Investigation

How can we lift a 1kg weight using a lever?

You will need:

- 1 x 1kg weight (to act as the load)
- 10 x 100g weights (to create a range of forces)
- A 1 metre ruler (to act as the beam)
- A suitable fulcrum (such as a poster tube)

Method

Set up the apparatus as shown in the diagram. Place the 1kg load at one end of the ruler. Place the fulcrum 20cm from the load.

Predict and then measure how far a 1kg weight needs to be from the fulcrum in order to make the beam balance. Record your prediction and measurement in the table.

Predict and then measure how far a 900 weight needs to be. Repeat with 800, 700, 600, 500, 400, 300, 200 and 100g weights.

Predict and measure the distance the weight needs to be from the fulcrum in order to make the beam balance.

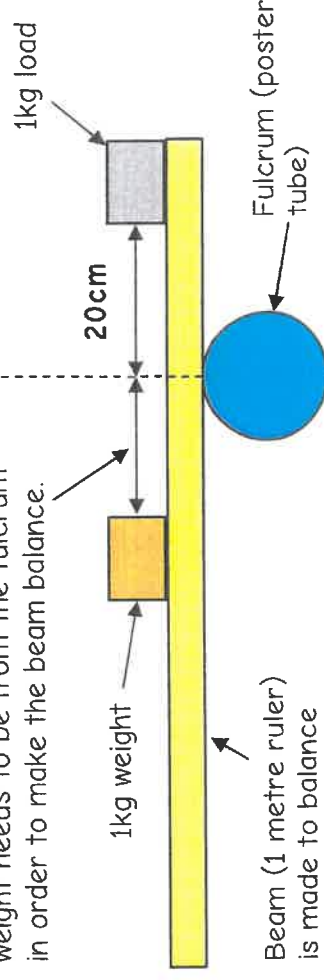
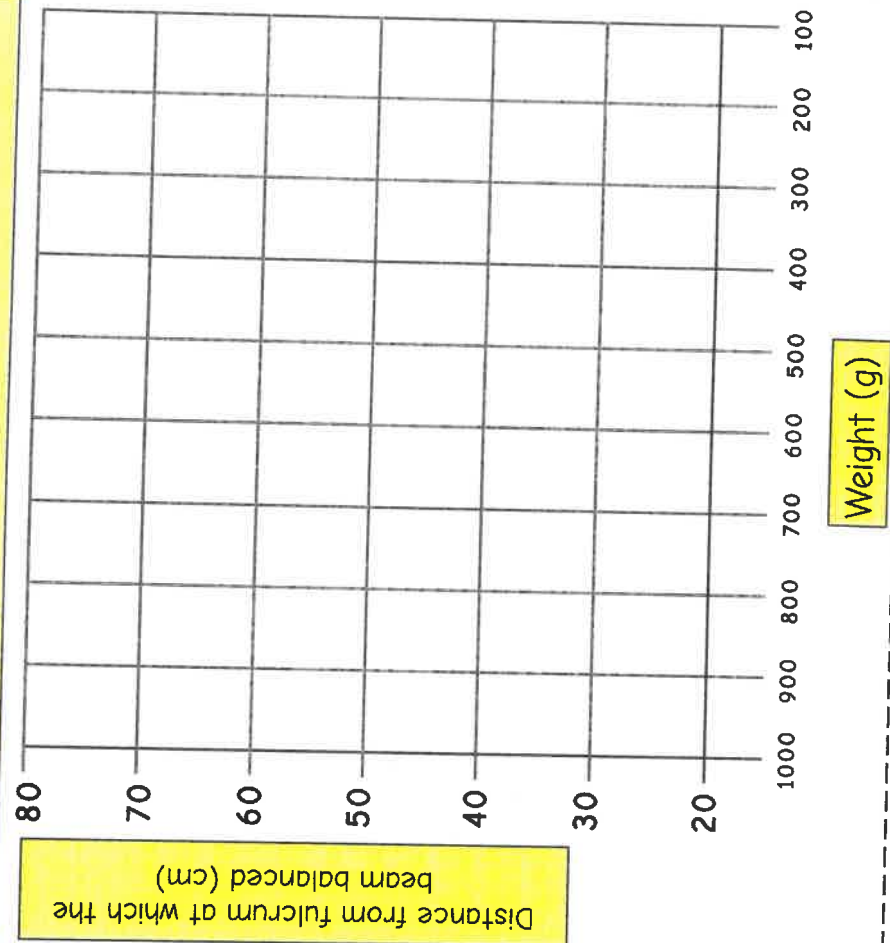


Table showing the distance at which different weights needed to be from a fulcrum in order to balance a 1kg load

	Distance from fulcrum (cm)	
	Prediction	Measurement
1kg		
900g		
800g		
700g		
600g		
500g		
400g		
300g		
200g		
100g		

Line graph showing the distance at which different weights needed to be from a fulcrum in order to balance a 1kg load



Discussion

How accurate were your predictions?
 What happened to the distance the weight needed to be from the fulcrum as the size of the weight decreased?
 How far did the 1kg load move? How far did the weights which you added move?
 Can you explain how the lever works?

Science Session2

Your task is to research and create a presentation all about the founder of 'Gravity' Issac Newton. It is up to you how you present your ideas, this could be a powerpoint presentation, poster, fact file, flip cards or mood board.

Maths

Silver Award

X	4	6	2	5	10	3
5						
2						
10						
4						
1						
7						
3						
12						
8						
6						
9						
11						

Gold Award

[illegible]

Bronze Award

X	2	5	10	4
5				
2				
10				
4				
1				
7				
3				
12				
8				
6				
9				
11				

Varied Fluency

Step 2 - Subtracting Decimals Within 1

National Curriculum Objectives:

Mathematics Year 5: (5F10) [Solve problems involving number up to 3dp.](#)

Mathematics Year 5: (5M9a) [Use all four operations to solve problems involving measure \[for example, length, mass, volume, money\] using decimal notation, including scaling.](#)

Differentiation:

Developing Questions to support subtracting decimals within 1 using hundredths and tenths, no exchanges.

Expected Questions to support subtracting decimals within 1 using thousandths, hundredths and tenths, with exchanges.

Greater Depth Questions to support subtracting decimals within 1 using thousandths, hundredths and tenths with multiple exchanges per question.

More [Year 5 Decimals](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Subtracting Decimals Within 1

Subtracting Decimals Within 1

1a. Use the cubes and tables to calculate:

Ones	Tenths	Hundredths
		

How much is 2 tenths less than this?
Now subtract 2 hundredths?



VF

1b. Use the cubes and tables to calculate:

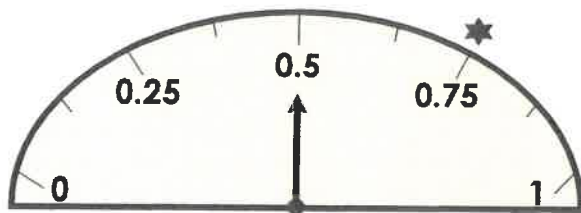
Ones	Tenths	Hundredths
		

How much is 1 tenth less than this?
Now subtract 2 hundredths?



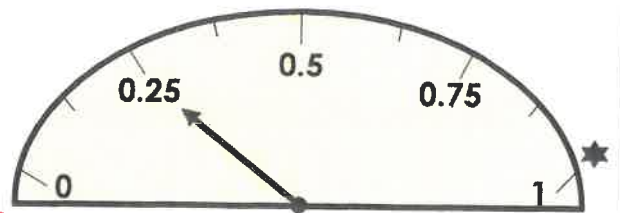
VF

2a. What is the difference between the reading on the scale and your target weight marked with ★.



VF

2b. What is the difference between the reading on the scale and your target weight marked with ★.



VF

3a. Find the missing number in each bar model.

0.12	
0.68	

	0.21		0.02	
0.82		0.66		

Now write each as a subtraction.



VF

3b. Find the missing number in each bar model.

	0.12
0.86	

	0.45		0.26
0.67		0.87	

Now write each as a subtraction.



VF

4a. True or false?

$$0.88 - 0.16 = 0.72$$



VF

4b. True or false?

$$0.78 - 0.64 = 0.16$$



VF

5a. Calculate the difference using the number line.



VF

5b. Calculate the following using a number line.



VF

Subtracting Decimals Within 1

Subtracting Decimals Within 1

6a. Use the cubes and tables to calculate:

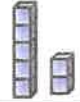
Ones	Tenths	Hundredths	Thousandths
			

How much is 3 tenths less than this?
Now subtract 4 hundredths?
What is another 6 thousandths less?



VF

6b. Use the cubes and tables to calculate:

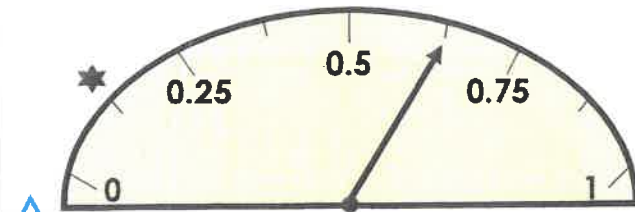
Ones	Tenths	Hundredths	Thousandths
			

How much is 4 tenths less than this?
Now subtract 8 hundredths?
What is another 2 thousandths less?



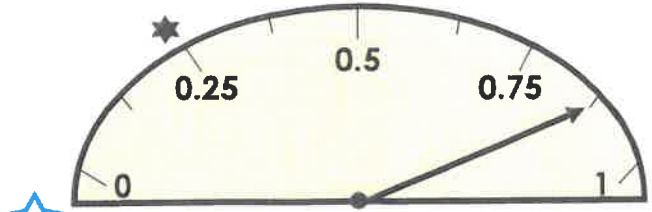
VF

7a. What is the difference between the reading on the scale and your target weight marked with ★.



VF

7b. What is the difference between the reading on the scale and your target weight marked with ★.



VF

8a. Find the missing number in each bar model.

0.153	
0.474	

	0.349	0.725	
0.971		0.963	

Now write each as a subtraction.



VF

8b. Find the missing number in each bar model.

	0.623
0.839	

	0.159		0.46
0.764		0.783	

Now write each as a subtraction.



VF

9a. True or false?

$$0.863 - 0.276 = 0.612$$



VF

9b. True or false?

$$0.175 - 0.089 = 0.091$$



VF

10a. Calculate the difference using the number line.



VF

10b. Calculate the following using a number line.



VF

Subtracting Decimals Within 1

Subtracting Decimals Within 1

11a. Use the cubes and tables to calculate:

Ones	Tenths	Hundredths	Thousandths
			

How much is 8 tenths, 5 hundredths and 2 thousandths less than this?



VF

11b. Use the cubes and tables to calculate:

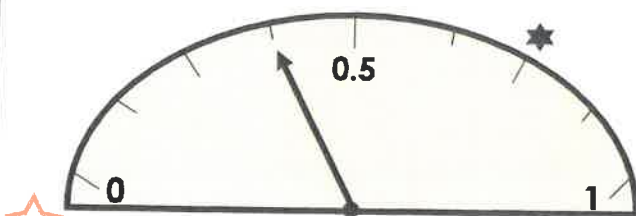
Ones	Tenths	Hundredths	Thousandths
			

How much is 5 hundredths and 9 thousandths less than this?



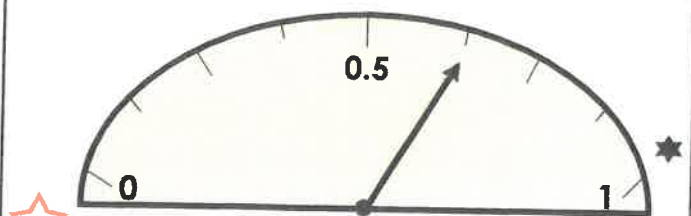
VF

12a. What is the difference between the reading on the scale and your target weight marked with ★. Give your answer in kilograms.



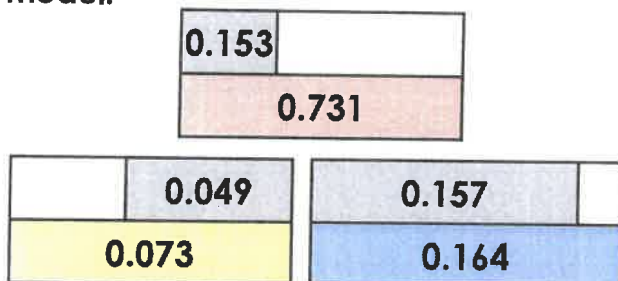
VF

12b. What is the difference between the reading on the scale and your target weight marked with ★. Give your answer in kilograms.



VF

13a. Find the missing number in each bar model.



Now write each as a subtraction.



VF

13b. Find the missing number in each bar model.



Now write each as a subtraction.



VF

14a. True or false?

$$0.983 - 0.698 = 0.315$$



VF

14b. True or false?

$$0.769 - 0.08 = 0.761$$



VF

15a. Calculate the difference using the number line.



VF

15b. Calculate the following using a number line.



VF

Varied Fluency
Subtracting Decimals Within 1

Developing

- 1a. 0.73, 0.53, 0.51
- 2a. 0.25kg
- 3a. 0.56, 0.61, 0.64
- 4a. True.
- 5a. Various representations possible. The difference is 0.03

Expected

- 6a. 0.165, 0.125, 0.119
- 7a. 0.5kg
- 8a. 0.321, 0.622, 0.238
- 9a. False. The difference is 0.587
- 10a. Various representations possible. The difference is 0.319

Greater Depth

- 11a. 0.079
- 12a. 0.375kg
- 13a. 0.578, 0.024, 0.007
- 14a. False. The difference is 0.285
- 15a. 0.342

Varied Fluency
Subtracting Decimals Within 1

Developing

- 1b. 0.34, 0.24, 0.22
- 2b. 0.75kg
- 3b. 0.74, 0.22, 0.61
- 4b. False. The difference is 0.14
- 5b. Various representations possible. The difference is 0.33

Expected

- 6b. 0.273, 0.193, 0.191
- 7b. 0.575kg
- 8b. 0.216, 0.605, 0.323
- 9b. True.
- 10b. Various representations possible. The difference is 0.347

Greater Depth

- 11b. 0.483
- 12b. 0.375kg
- 13b. 0.278, 0.685, 0.113
- 14b. False. The difference is 0.689
- 15b. 0.077

Scheme of Learning

Year 5

#MathsEveryoneCan

**White
Rose
Maths**

Spring - Block 3

Decimals & Percentages

Overview

Small Steps

Decimals up to 2 d.p.

Decimals as fractions (1)

Decimals as fractions (2)

Understand thousandths

Thousandths as decimals

Rounding decimals

Order and compare decimals

Understand percentages

Percentages as fractions and decimals

Equivalent F.D.P.

NC Objectives

Read, write, order and compare numbers with up to three decimal places.

Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.

Round decimals with two decimal places to the nearest whole number and to one decimal place.

Solve problems involving number up to three decimal places.

Recognise the percent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.

Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25

Decimals up to 2 d.p.

Notes and Guidance

Children use place value counters and a place value grid to make numbers with up to two decimal places.

They read and write decimal numbers and understand the value of each digit.

They show their understanding of place value by partitioning decimal numbers in different ways.

Mathematical Talk

How many ones/tenths/hundredths are in the number?
How do we write this as a decimal? Why?

What is the value of the ____ in the number ____?

When do we need to use zero as a place holder?

How can we partition decimal numbers in different ways?

Varied Fluency

Which number is represented on the place value chart?

Ones	Tenths	Hundredths
	3	0.01
0	1	2

There are ____ ones, ____ tenths
and ____ hundredths.

The number is ____

Represent the numbers on a place value chart and complete the stem sentences.

0.28

0.65

0.07

1.26

Make the numbers with place value counters and write down the value of the underlined digit.

2.45

3.04

4.44

43.34

$0.76 = 0.7 + 0.06 = 7 \text{ tenths and } 6 \text{ hundredths.}$
Fill in the missing numbers.

$0.83 = \text{____} + 0.03 = \text{____}$ and 3 hundredths.

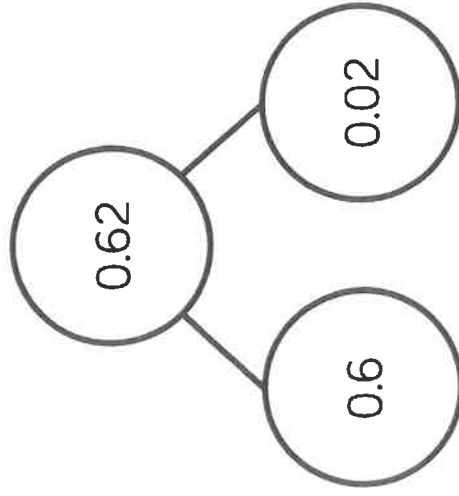
$0.83 = 0.7 + \text{____} = 7 \text{ tenths and } \text{____}$

How many other ways can you partition 0.83?

Decimals up to 2 d.p.

Reasoning and Problem Solving

Dexter says there is only one way to partition 0.62



Prove Dexter is incorrect by finding at least three different ways of partitioning 0.62

$$0.62 = 0.12 + 0.5$$

$$0.62 = 0.4 + 0.22$$

$$0.62 = 0.3 + 0.32$$

$$0.62 = 0.42 + 0.2$$

$$0.62 = 0.1 + 0.52$$

$$0.62 = 0.03 + 0.59$$

etc.

Match each description to the correct number.

My number has the same amount of tens and tenths.



Teddy

My number has one decimal place.



Amir

My number has two hundredths.



Rosie

My number has six tenths.



Eva

Teddy – 40.46

Amir – 46.2

Rosie – 46.02

Eva – 2.64

46.2

2.64

46.02

40.46

Decimals as Fractions (1)

Notes and Guidance

Children explore the relationship between decimals and fractions. They start with a fraction (including concrete and pictorial representations of fractions) convert it into a decimal and as they progress, children will see the direct link between fractions and decimals.

Children use their previous knowledge of fractions to aid this process.

Mathematical Talk

What does the whole grid represent?

What can we use to describe the equal parts of the grid (fractions and decimals)?

How would you convert a fraction to a decimal?

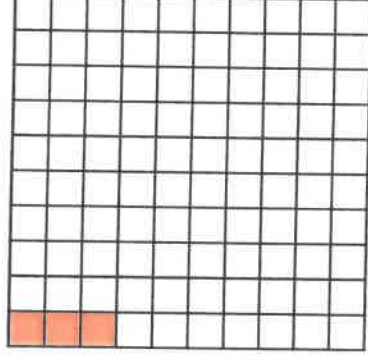
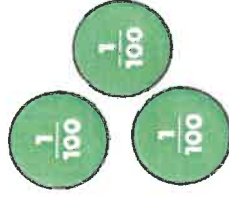
What does the decimal point mean?

Can the fraction be simplified?

How can you prove that the decimal ____ and the fraction ____ are the same?

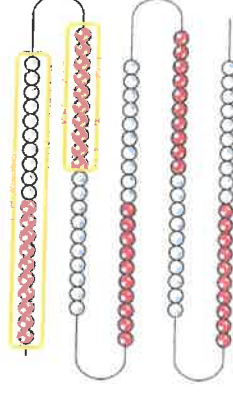
Varied Fluency

What fraction is shown in both representations?
Can you convert this in to a decimal?



The fraction ____ is the same as the decimal ____

If the whole bead string represents one whole, what decimal is represented by the highlighted part? Can you represent this on a 100 square?

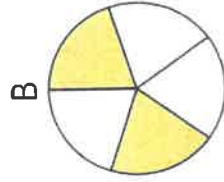


Decimals as Fractions (1)

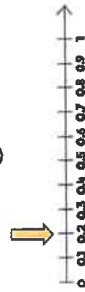
Reasoning and Problem Solving

Odd one out

Which of the images below is the odd one out?



C



Explain why.

Possible answer:

B is the odd one out because it shows $\frac{2}{5}$, which is $\frac{4}{10}$ or 0.4

The other images show $\frac{2}{10}$ or 0.2

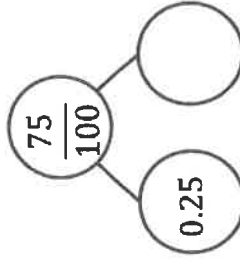
Possible answers:

$$\frac{50}{100}$$

$$1 \frac{1}{2}$$

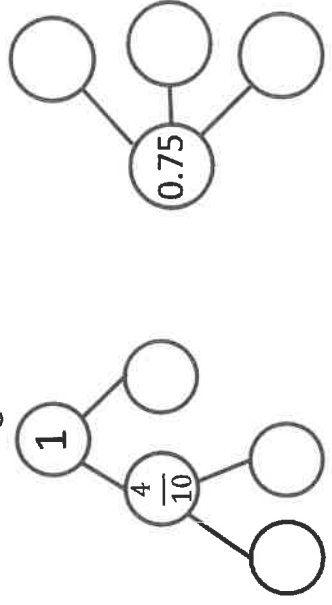
$$0.5$$

How many different ways can you complete the part-whole model using fractions and decimals?



Create another part-whole model like the one above for your partner to complete.

Now complete the following part-whole models using fractions and decimals.



There are various possible answers when completing the part-whole models. Ensure both fractions and decimals are represented.

Decimals as Fractions (2)

Notes and Guidance

Children concentrate on more complex decimals numbers (e.g. 0.96, 0.03, 0.27) and numbers greater than 1 (e.g. 1.2, 2.7, 4.01).

They represent them as fractions and as decimals.

Children record the number in multiple representations, including expanded form and in words.

Mathematical Talk

In the number 1.34 what does the 1 represent, what does the 3 represent, what does the 4 represent?

Can we represent this number in a different way, and another, and another?

On the number line, where can we see tenths? Where can we see hundredths?

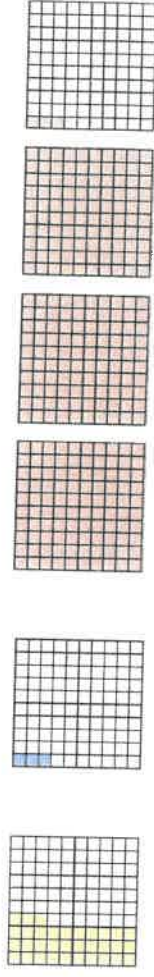
On the number line, tell me another number that is between c and d. Now give your answer as a fraction. Tell me a number that is not between c and d.

Varied Fluency

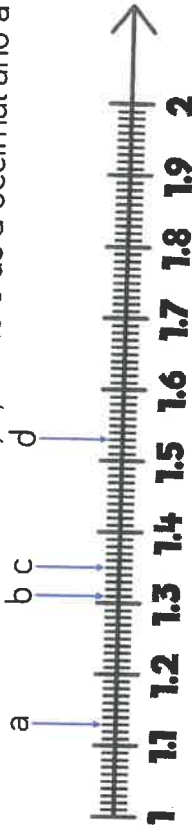
Use the models to record equivalent decimals and fractions.



$$0.3 = \frac{3}{10} = \frac{30}{100}$$



Write down the value of a, b, c and d as a decimal and a fraction.



Complete the table.

Concrete	Decimal	Decimal - expanded form	Fraction	Fraction - expanded form	In words
	3.24	$3 + 0.2 + 0.04$	$3\frac{24}{100}$	$3 + \frac{2}{10} + \frac{4}{100}$	Three ones, two tenths and four hundredths.
	3.01		$3\frac{1}{100}$		
				$3 + \frac{4}{10} + \frac{2}{100}$	
					Two ones, three tenths and two hundredths.

Decimals as Fractions (2)

Reasoning and Problem Solving

2.25 = 2 ones, 2 tenths and 5 hundredths.

Can you write the following numbers in at least three different ways?

23.7

2.37

9.08

0.98

Amir says,

To convert a fraction to a decimal, take the numerator and put it after the decimal point.

$$\text{E.g. } \frac{21}{100} = 0.21$$



Write two examples of converting fractions to decimals to prove this does not always work.

Possible answer:
Children may represent it in words, decimals, fractions, expanded form but also by partitioning the number in different ways.

Possible answers could include $\frac{1}{100}$ is not equal to 0.1

Use the digits 3, 4 and 5 to complete the decimal number.

0

List all the possible numbers you can make.

Write these decimals as mixed numbers.

Choose three of the numbers and write them in words.

30.45, 30.54,
40.35, 40.53,
50.43, 50.34

$30\frac{45}{100}$, $30\frac{54}{100}$

$40\frac{35}{100}$, $40\frac{53}{100}$

$50\frac{43}{100}$, $50\frac{34}{100}$

Understand Thousandths

Notes and Guidance

Children build on previous learning of tenths and hundredths and apply this to understanding thousandths.

Opportunities to develop understanding of thousandths through the use of concrete and pictorial representations need to be incorporated.

When exploring the relationships between tenths, hundredths and thousandths, consider decimal and mixed number equivalences.

Mathematical Talk

If 4 tenths = 0.4, 4 hundredths = 0.04, what is 4 thousandths equal to?

Using the place value charts:

- How many tenths are in a whole?
- How many hundredths are there in 1 tenth?
- Using place value counters complete the final chart.
- How many thousandths in 1 hundredth?

Varied Fluency

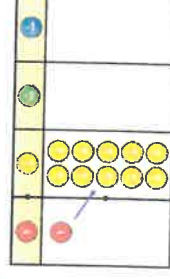
Eva is using Base 10 to represent decimals.

 = 1 whole  = 1 tenth  = 1 hundredth  = 1 thousandth

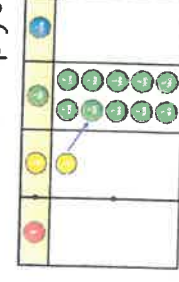
Use Base 10 to build:

- 4 wholes, 4 tenths, 4 hundredths, 4 thousandths
- 5 tenths, 7 hundredths and 5 thousandths
- 2.357

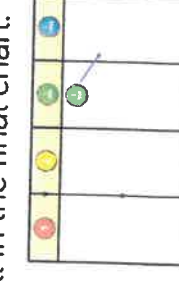
Use the place value counters to help you fill in the final chart.



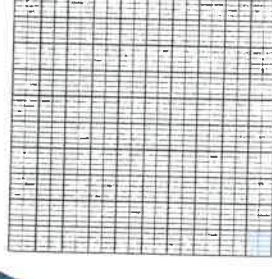
 = ____ tenths



 = ____ hundredths



 = ____ thousandths



What has this hundred square been divided up into?

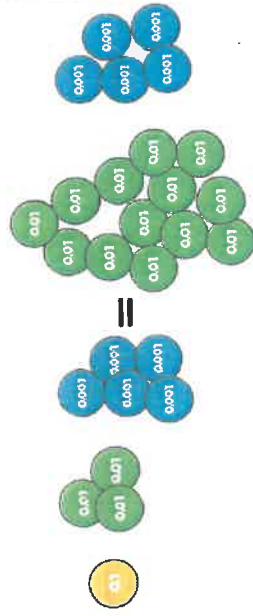
How many thousandths are there in one hundredth?

How many thousandths are in one tenth?

Understand Thousandths

Reasoning and Problem Solving

Rosie thinks the 2 values are equal.



Do you agree?

Explain your thinking.

Can you write this amount as a decimal and as a fraction?

Agree.

We can exchange ten hundredth counters for one tenth counter.

$$0.135 = \frac{135}{1000}$$

0.394

= 3 tenths, 9 hundredths and 4 thousandths

$$= \frac{3}{10} + \frac{9}{100} + \frac{4}{1000}$$

$$= 0.3 + 0.09 + 0.004$$

Write these numbers in three different ways:

0.472

0.529

0.307

$$\begin{aligned} 0.472 &= 4 \text{ tenths,} \\ &\text{seven hundredths} \\ &\text{and 2 thousandths} \\ &= \frac{4}{10} + \frac{7}{100} + \frac{2}{1000} \\ &= 0.4 + 0.07 + 0.002 \end{aligned}$$

$$\begin{aligned} 0.529 &= 5 \text{ tenths,} \\ &\text{two hundredths} \\ &\text{and 9 thousandths} \\ &= \frac{5}{10} + \frac{2}{100} + \frac{9}{1000} \\ &= 0.5 + 0.02 + 0.009 \end{aligned}$$

$$\begin{aligned} 0.307 &= 3 \text{ tenths} \\ &\text{and 7 thousandths} \\ &= \frac{3}{10} + \frac{7}{1000} \\ &= 0.3 + 0.007 \end{aligned}$$

Thousandths as Decimals

Notes and Guidance

Children build on their understanding of decimals and further explore the link between tenths, hundredths and thousandths.

They represent decimals in different ways and also explore deeper connections such as $\frac{100}{1000}$ is the same as $\frac{1}{10}$

Mathematical Talk

What number is represented? How will we show this on the place value chart? How many ones/tenths/hundredths/thousandths do I have?

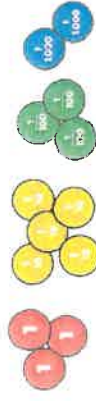
Where would 2.015 be positioned on the number line? How many thousandths do I have? How do I record this as a mixed number?

Varied Fluency

Use the place value chart and counters to represent these numbers.

Write down the numbers as a decimal.

a)



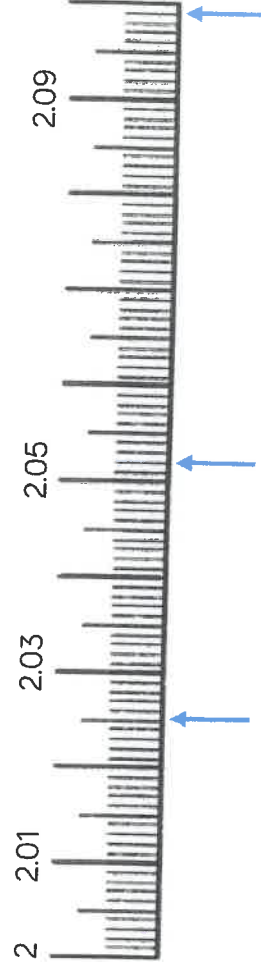
b) 4 ones, 6 tenths, 0 hundredths and 2 thousandths

c) $3\frac{34}{1000}$

1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$

The arrows are pointing to different numbers.

Write each number as a decimal and then as a mixed number.



Thousandths as Decimals

Reasoning and Problem Solving

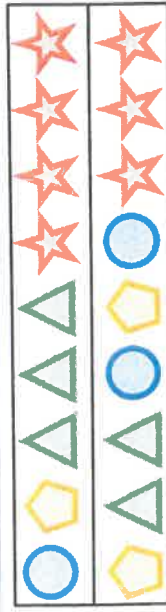
Ron has 8 counters. He makes numbers using the place value chart.

At least 3 columns have counters in.

What is the largest and the smallest number he can make with 8 counters?

1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$

Can you record the numbers in different ways?



In this problem symbols have been used to represent two different

numbers. Write down the value of each, as a mixed number and as a decimal.

$\bigcirc = 1$
 $\star = \frac{1}{10}$
 $\triangle = \frac{1}{100}$
 $\text{pentagon} = \frac{1}{1000}$

Smallest: 0.116

Largest: 6.11

1.431

2.322

Three children are representing the number 0.504

Annie

$$0.504 = \frac{504}{1000}$$



Alex

$$0.504 = \frac{3}{10} + \frac{2}{10} + \frac{4}{1000}$$

Teddy

$$0.504 = \frac{5}{10} + \frac{4}{1000}$$

Who is correct? Explain why.

Possible answer:

They are all correct. Annie has recorded it as a fraction. Alex and Teddy have partitioned it differently.

Rounding Decimals

Notes and Guidance

Children develop their understanding of rounding to the nearest whole number and to the nearest tenth.

Number lines support children to understand where numbers appear in relation to other numbers and are important in developing conceptual understanding of rounding.

Mathematical Talk

What number do the ones and tenths counters represent?

How many decimal places does it have?

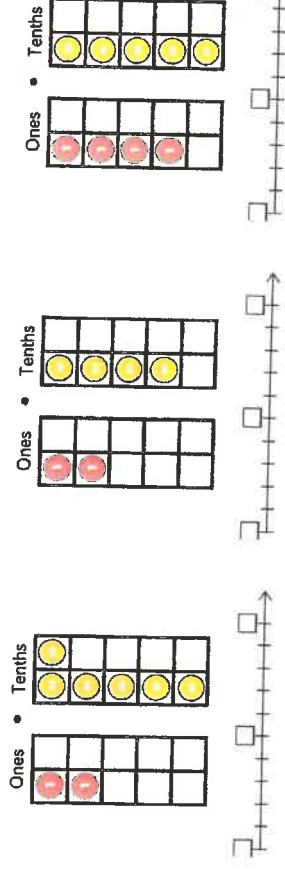
When rounding to the nearest one decimal place, how many digits will there be after the decimal point?

Where would 3.25 appear on both number lines?

What is the same and what is different about the two number lines?

Varied Fluency

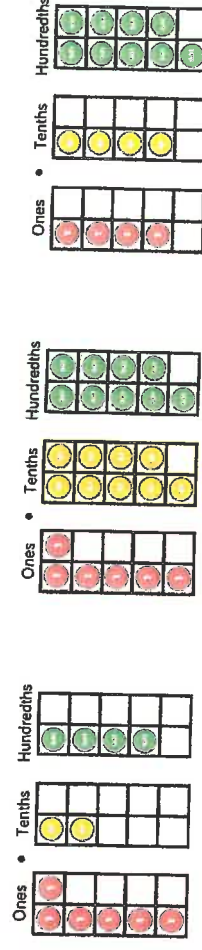
Complete the number lines and round the representations to the nearest whole number:



Use the number lines to round 3.24 to the nearest tenth and the nearest whole number.



Round each number to the nearest tenth and nearest whole number. Use number lines to help you.



Round Decimals

Reasoning and Problem Solving

Dexter is measuring a box of chocolates with a ruler that measures in centimetres and millimetres.



He measures it to the nearest cm and writes the answer 28 cm.

What is the smallest length the box of chocolates could be?

Smallest: 27.5 cm



Whitney is thinking of a number.

Rounded to the nearest whole her number is 4

Rounded to the nearest tenth her number is 3.8

Write down at least 4 different numbers that she could be thinking of.

Possible answers:

3.84
3.83
3.82 etc.

Some children might include answers such as 3.845

A number between 11 and 20 with 2 decimal places rounded to the same number when rounded to one decimal place and when rounded to the nearest whole number?

What could this be?
Is there more than one option?
Explain why.

The whole number can range from 11 to 19 and the decimal places can range from $\underline{\hspace{1cm}}.95$ to $\underline{\hspace{1cm}}.99$

Can children explain why this works?

Order & Compare Decimals

Notes and Guidance

Children order and compare numbers with up to three decimal places.

They use place value counters to represent the numbers they are comparing.

Number lines support children to understand where numbers appear in relation to other numbers.

Mathematical Talk

What number is represented by the place value counters?

_____ is greater/less than _____ because...

Explain how you know.

Can you build the numbers using place value counters?

How can you use these concrete representations to compare sizes?

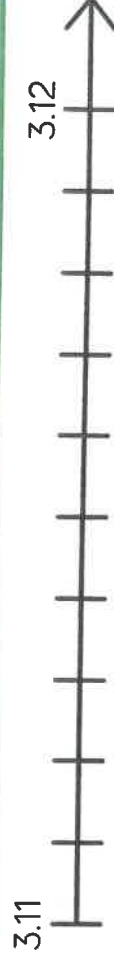
Varied Fluency

Use $<$, $>$ or $=$ to make the statements correct.



Place the numbers in ascending order on the number line.

3.115 $3 \frac{113}{1000}$ Three and 11 hundredths



Place in descending order.

- 0.123 0.321 0.231 0.103
- 3.2 km 3.21 km 3.212 km 3202 m
- 65.394 65.309 63.999 65.493

¹⁶ Check your answers using place value chart.

Order & Compare Decimals

Reasoning and Problem Solving

Alex says,



3.105 is greater than 3.2
because 105 is greater
than 2

Do you agree?
Explain your answer.

Alex is wrong
because 2 tenths
is larger than 105
thousandths.

Tommy says,

I have put some numbers into
ascending order:

3.015

$3\frac{51}{1000}$

3.105

$3\frac{51}{100}$



Tommy has missed one number out.
It should go in the middle of this list.
What could his number be?
What can't his number be?

Could be:

3.052

3.053

3.054

3.104 etc.

It can't be a
number below
3.051 or above
3.105

Understand Percentages

Notes and Guidance

Children are introduced to 'per cent' for the first time and will understand that 'per cent' relates to 'number of parts per hundred'.

They will explore this through different representations which show different parts of a hundred. Children will use 'number of parts per hundred' alongside the % symbol.

Mathematical Talk

How many parts is the square split in to?

How many parts per hundred are shaded/not shaded?

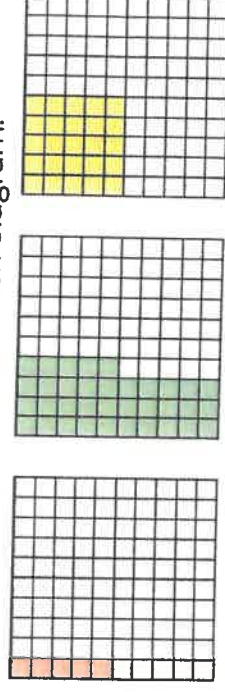
Can we represent this percentage differently?

Look at the bar model, how many parts is it split into?

If the bar is worth 100%, what is each part worth?

Varied Fluency

Complete the sentence stem for each diagram.

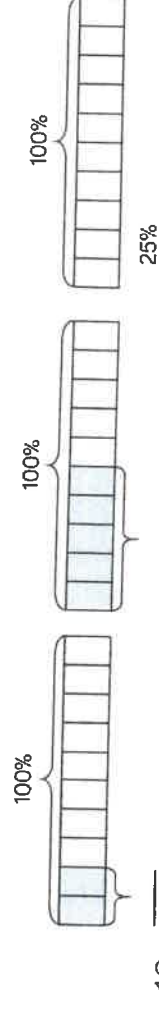


There are ____ parts per hundred shaded. This is ____ %

Complete the table.

Pictorial	Parts per hundred	Percentage
	There are 51 parts per hundred.	
		75%

Complete the bar models.



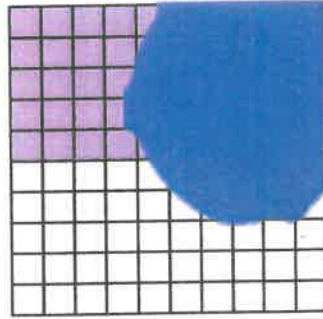
18

25%

Understand Percentages

Reasoning and Problem Solving

Oh no! Dexter has spilt ink on his hundred square.



Complete the sentence stems to describe what percentage is shaded.

It could be...

It must be...

It can't be...

Some possible answers:

It could be 25%

It must be less than 70%

It can't be 100%

Mo, Annie and Tommy all did a test with 100 questions. Tommy got 6 fewer questions correct than Mo.

Name	Score	Percentage
Mo	56 out of 100	
Annie		65%
Tommy		

Complete the table.

How many more marks did each child need to score 100%?

56%
65 out of 100
50 out of 100
50%

Mo needs 44
Annie needs 35
Tommy needs 50

Neither. They both have an equal number of sweets remaining.

Dora and Amir each have 100 sweets. Dora eats 65% of hers. Amir has 35 sweets left.

Who has more sweets left?



Percentages as Fractions & Decimals

Notes and Guidance

Children represent percentages as fractions using the denominator 100 and make the connection to decimals and hundredths.

Children will recognise percentages, decimals and fractions are different ways of expressing proportions.

Mathematical Talk

- What do you notice about the percentages and the decimals?
- What's the same and what's different about percentages, decimals and fractions?
- How can we record the proportion of pages Alex has read as a fraction? How can we turn it into a percentage?
- Can you convert any percentage into a decimal and a fraction?

Varied Fluency

Complete the table.

Pictorial	Percentage	Fraction	Decimal
	41 parts per hundred 41%	41 out of 100 $\frac{41}{100}$	41 hundredths 0.41
	7 parts per hundred 7%		

Alex has read 93 pages of her book. Her book has 300 pages.
What proportion of her book has she read? Give your answer as a percentage and a decimal.

$\frac{93}{300} = \frac{?}{100} = \frac{\quad}{100} \% = \quad$

Record the fractions as decimals and percentages.

$\frac{120}{300} \quad \frac{320}{400} \quad \frac{20}{200} \quad \frac{12}{50}$

Percentages as Fractions & Decimals

Reasoning and Problem Solving

Teddy says,



To convert a fraction to a percentage, you just need to put a percent sign next to the numerator.

Is Teddy correct? Explain your answer.

At a cinema, $\frac{4}{10}$ of the audience are adults.
The rest of the audience is made up of boys and girls.
There are twice as many girls as boys.

What percentage of the audience are girls?

Teddy is incorrect, this only works when the denominator is 100 because percent means parts per hundred.

60% are children, so 40% are girls and 20% boys.

Children may use a bar model to represent this problem.

Three children have each read 360 pages of their own book.

Ron's book has 500 pages.
Dora's book has 400 pages.
Eva's book has 600 pages.

What fraction of their books have they each read?

What percentage of their books have they read?

How much of their books have they each read as a decimal?

Who has read the most of their book?

Ron has read $\frac{360}{500}$, 72% or 0.72

Dora has read $\frac{360}{400}$, 90% or 0.9

Eva has read $\frac{360}{600}$, 60% or 0.6

Dora has read the most of her book.

Equivalent F.D.P.

Reasoning and Problem Solving

Sort the fractions, decimals and percentages into the correct column.

50% 100% $\frac{30}{60}$

Seven tenths 60% 0.25

70 hundredths $\frac{1}{4}$ 7%

Less than $\frac{1}{2}$	Equal to $\frac{1}{2}$	Greater than $\frac{1}{2}$

Less than $\frac{1}{2}$:
 $\frac{1}{4}$, 0.25, 7%

Equal to $\frac{1}{2}$:
50% and $\frac{30}{60}$

Greater than $\frac{1}{2}$:
Seven tenths, 70 hundredths, 60% and 100%

£5.50

Jack has £55
He spends $\frac{3}{5}$ of his money on a coat and 30% on shoes.
How much does he have left?

Tommy is playing a maths game.
Here are his scores at three different levels.

Level A – 440 points out of 550

Level B – 210 points out of 300

Level C – 45 points out of 90

At which level did he have a higher success rate?

Level A: 80%
Level B: 70%
Level C: 50%

Tommy had a higher success rate on level A.

Children may wish to compare using decimals instead.

Homework/Extension

Step 2: Decimals as Fractions 1

National Curriculum Objectives:

Mathematics Year 5: (5F6a) [Read and write decimal numbers as fractions \[for example, \$0.71 = 71/100\$ \]](#)

Mathematics Year 5: (5F6b) [Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents](#)

Mathematics Year 5: (5F12) [Solve problems which require knowing percentage and decimal equivalents of \$1/2\$, \$1/4\$, \$1/5\$, \$2/5\$, \$4/5\$ and those fractions with a denominator of a multiple of 10 or 25](#)

Differentiation:

Questions 1, 4 and 7 (Varied Fluency)

Developing Shade the 100 square to represent the decimal given as a fraction. Includes tenths and hundredths only.

Expected Shade the 100 square to represent the decimal given as a fraction. Includes tenths and a quarter.

Greater Depth Shade the 100 square to represent the decimal given as a fraction. Includes quarters and fifths.

Questions 2, 5 and 8 (Varied Fluency)

Developing Match the representation to the correct decimal and fraction. Includes tenths and hundredths only.

Expected Match the representation to the correct decimal and fraction. Includes tenths, hundredths, fifths and a half.

Greater Depth Match the representation to the correct decimal and fraction. Includes tenths, hundredths, quarters, fifths and a denominator of 25.

Questions 3, 6 and 9 (Reasoning and Problem Solving)

Developing Identify and explain if the statement is true or false. Includes tenths and hundredths only.

Expected Identify and explain if the statement is true or false. Includes tenths, hundredths and quarters.

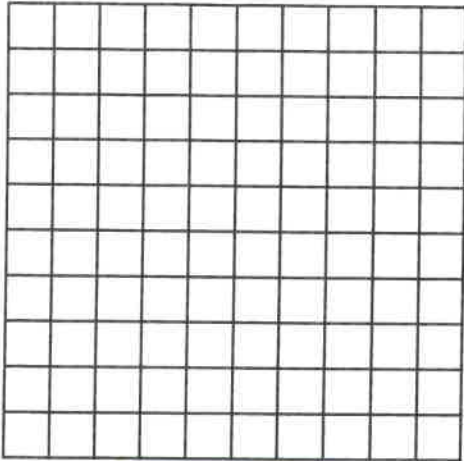
Greater Depth Identify and explain if the statement is true or false. Includes tenths, hundredths and fifths.

More [Year 5 Decimals and Percentages](#) resources.

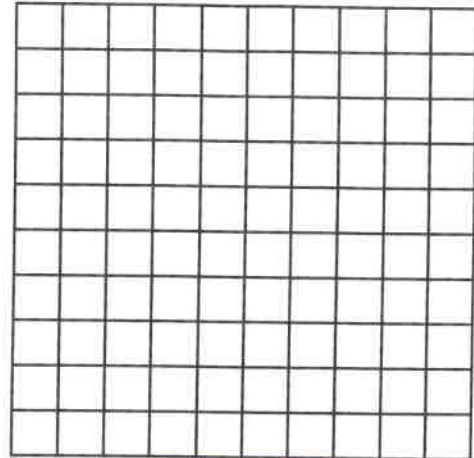
Did you like this resource? Don't forget to [review](#) it on our website.

Decimals as Fractions 1

1. Shade the 100 squares to show the decimals below as fractions.



= $\frac{\square}{\square}$



= $\frac{\square}{\square}$



A. 0.3

B. 0.8

VF
HW/Ext

2. Match the visual representation to the decimal and the fraction it shows.

A.



0.4

$\frac{9}{10}$

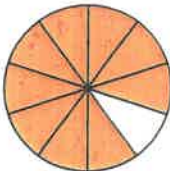
B.



0.6

$\frac{4}{10}$

C.



0.9

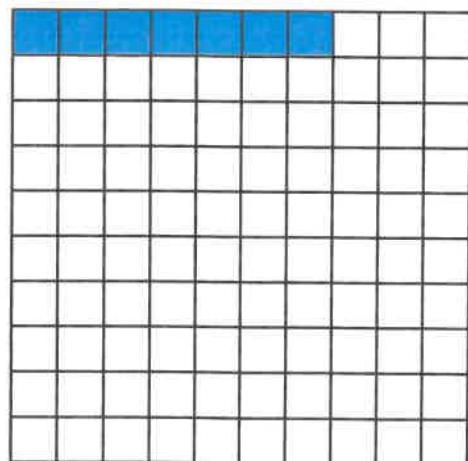
$\frac{60}{100}$



VF
HW/Ext

3. True or false?

The image shows the decimal 0.7 and the fraction $\frac{7}{100}$.



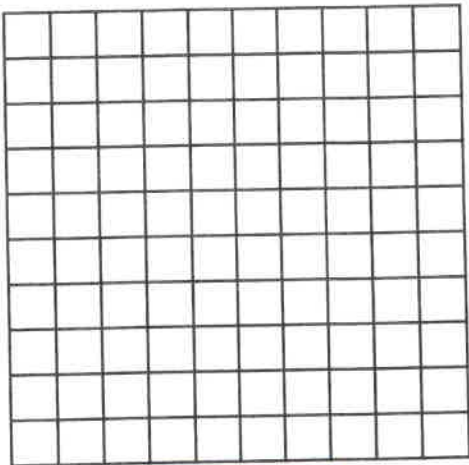
Explain your reasoning.



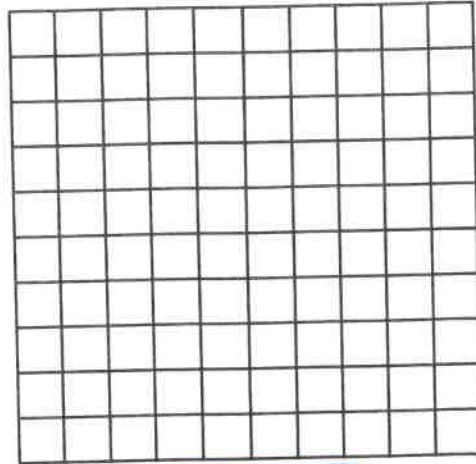
RPS
HW/Ext

Decimals as Fractions 1

4. Shade the 100 squares to show the decimals below as fractions.



= $\frac{\square}{\square}$ or $\frac{\square}{\square}$



= $\frac{\square}{\square}$



A. 0.25

B. 0.7

VF
HW/Ext

5. Match the visual representation to the decimal and the fraction it shows.

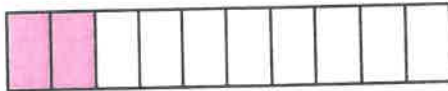
A.



0.5

$\frac{1}{5}$

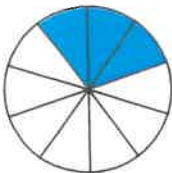
B.



0.3

$\frac{1}{2}$

C.



0.2

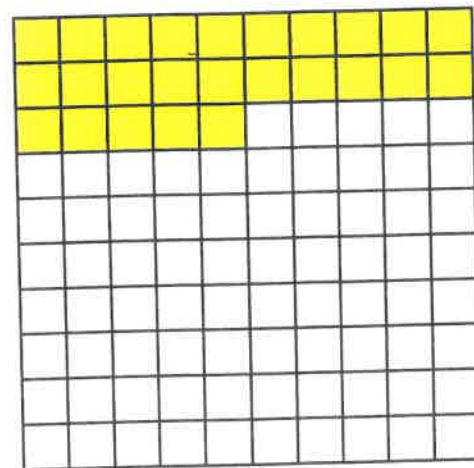
$\frac{30}{100}$



VF
HW/Ext

6. True or false?

The image shows the decimal 2.5 and the fraction $\frac{25}{100}$.



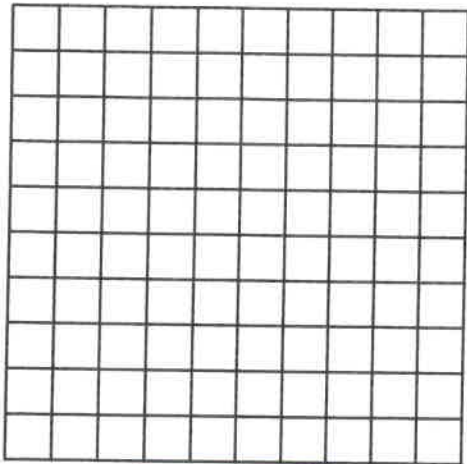
Explain your reasoning.



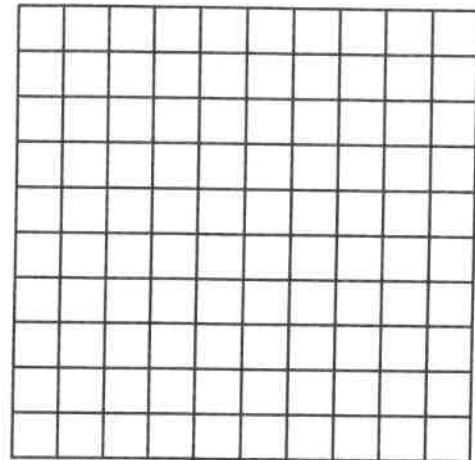
RPS
HW/Ext

Decimals as Fractions 1

7. Shade the 100 squares to show the decimals below as fractions.



$$= \frac{\square}{4}$$



$$= \frac{\square}{5}$$



A. 0.75

B. 0.6

VF
HW/Ext

8. Match the visual representation to the decimal and the fraction it shows.

A.



0.8

$\frac{10}{25}$

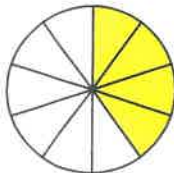
B.



0.25

$\frac{4}{5}$

C.



0.4

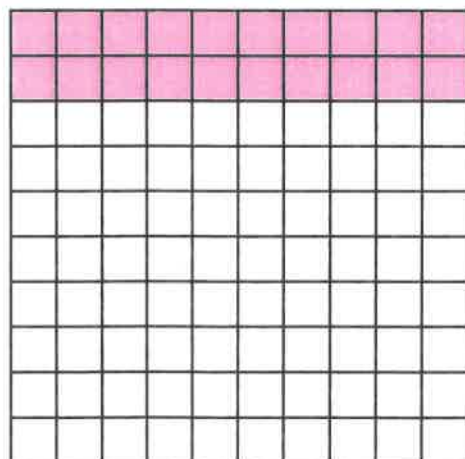
$\frac{1}{4}$



VF
HW/Ext

9. True or false?

The image shows the decimal 0.02 and the fraction $\frac{2}{5}$.



Explain your reasoning.



RPS
HW/Ext

Homework/Extension

Decimals as Fractions 1

Developing

1. A. 30 squares shaded, $\frac{30}{100}$ or $\frac{3}{10}$; B. 80 squares shaded, $\frac{80}{100}$ or $\frac{8}{10}$
2. A. 0.6, $\frac{60}{100}$; B. 0.4, $\frac{4}{10}$; C. 0.9, $\frac{9}{10}$
3. False. The image shows 0.07, which is equivalent to the fraction $\frac{7}{100}$.

Expected

4. A. 25 squares shaded, $\frac{25}{100}$ or $\frac{1}{4}$; B. 70 squares shaded, $\frac{70}{100}$ or $\frac{7}{10}$
5. A. 0.5, $\frac{1}{2}$; B. 0.2, $\frac{1}{5}$; C. 0.3, $\frac{30}{100}$
6. False. The place value of the digits is incorrect. It should say 0.25, which is equivalent to $\frac{25}{100}$ or $\frac{1}{4}$.

Greater Depth

7. A. 75 squares shaded, $\frac{3}{4}$; B. 60 squares shaded, $\frac{3}{5}$
8. A. 0.25, $\frac{1}{4}$; B. 0.8, $\frac{4}{5}$; C. 0.4, $\frac{10}{25}$
9. False. The image shows the decimal 0.2, which is equivalent to $\frac{20}{100}$, $\frac{2}{10}$ or $\frac{1}{5}$.

Reasoning and Problem Solving

Step 1: Adding Decimals Within 1

National Curriculum Objectives:

Mathematics Year 5: (5F10) [Solve problems involving number up to 3dp.](#)

Mathematics Year 5: (5M9a) [Use all four operations to solve problems involving measure \[for example, length, mass, volume, money\] using decimal notation, including scaling.](#)

Differentiation:

Questions 1, 4, 7 (Reasoning)

Developing Explain whether a simple statement linked to adding decimals is correct.

Expected Explain whether a technical and hypothetical statement, linked to adding decimals, is correct.

Greater Depth Explain whether a statement, including maths vocabulary and linked to adding decimals is correct.

Questions 2, 5, 8 (Problem Solving)

Developing Find, correct and explain the mistake when adding 2 numbers of 2dp, within 1. No exchanges.

Expected Find, correct and explain the mistake when adding 2 numbers of 3dp, within 1. One exchange.

Greater Depth Find, correct and explain mistakes when adding 2 numbers to 3dp, within 1. Multiple exchanges and mistakes.

Questions 3, 6, 9 (Problem Solving)

Developing Calculate 2 missing digits (from a given range) when adding decimal numbers within 1. Tenths and hundredths only.

Expected Calculate 2 missing digits when adding decimal numbers within 1. Find all of the solutions. Tenths, hundredths and thousandths included.

Greater Depth Calculate 2 missing digits to balance a statement involving adding decimal numbers within 1. Find all of the solutions. Tenths, hundredths and thousandths included.

More [Year 5 Decimals](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Adding Decimals Within 1

1a. Check what Joanne has said. Is she correct? Explain your answer.

When I add 0.1 to 0.09, my answer is 0.91.



R

Adding Decimals Within 1

1b. Check what Rowan has said. Is he correct? Explain your answer.

When I add 0.1 to 0.05, my answer will be 0.6.



R

2a. Geoff has taken a test. Mark his answers and write any corrections.

$0.83 + 0.01 = 0.09$	corrections
$0.62 + 0.26 = 8.8$	
$0.34 + 0.62 = 0.96$	
$0.53 + 0.04 = 0.93$	
$0.84 + 0.05 = 0.09$	



PS

2b. Martha has taken a test. Mark her answers and write any corrections.

$0.03 + 0.46 = 0.53$	corrections
$0.15 + 0.4 = 0.2$	
$0.04 + 0.07 = 0.74$	
$0.37 + 0.42 = 0.79$	
$0.85 + 0.01 = 0.95$	



PS

3a. Which digits from 5 to 9 could you put in the empty spaces to make this statement correct?

$$0.63 + 0.2 \square = 0.8 \square$$



PS

3b. Which digits from 0 to 5 could you put in the empty spaces to make this statement correct?

$$0.23 + 0. \square 4 = 0. \square 7$$



PS

Adding Decimals Within 1

4a. Check what Henri has said. Is he correct? Explain your answer.

You need to work from tenths to thousandths when you're adding decimals.



R

Adding Decimals Within 1

4b. Check what Grace has said. Is she correct? Explain your answer.

If you add two decimals your answer will never be more than 1.



R

5a. Evie has taken a test. Mark her answers and write any corrections.

	corrections
$0.132 + 0.828 = 0.951$	
$0.703 + 0.07 = 0.71$	
$0.824 + 0.011 = 0.835$	
$0.351 + 0.039 = 0.381$	
$0.646 + 0.341 = 0.987$	



PS

5b. Martha has taken a test. Mark her answers and write any corrections.

	corrections
$0.971 + 0.009 = 0.98$	
$0.76 + 0.073 = 1.49$	
$0.748 + 0.143 = 0.881$	
$0.628 + 0.304 = 0.912$	
$0.205 + 0.198 = 0.303$	



PS

6a. Which digits could you put in the empty spaces to make these statements correct?

$$0.454 + 0.2 \square = 0.7 \square 4$$

$$0.19 \square + 0.2 \square = 0.451$$



PS

6b. Which digits could you put in the empty spaces to make these statements correct?

$$0.133 + 0.2 \square = 0.4 \square 3$$

$$0.7 \square + 0.28 \square = 0.999$$



PS

Adding Decimals Within 1

7a. Check what Amany has said. Is she correct? If not, why not?

The sum of two numbers with 3 decimal places will always have 3 decimal places too.



R

Adding Decimals Within 1

7b. Check what Danny has said. Is she correct? If not, why not?

The sum of two decimals larger than 0.5 will always be more than one.



R

8a. Martin has taken a test. Mark his answers and write any corrections.

$0.548 + 0.354 = 0.902$	corrections
$0.003 + 0.879 = 0.909$	
$0.172 + 0.336 = 0.409$	
$0.626 + 0.275 = 0.901$	
$0.743 + 0.198 = 0.931$	



PS

8b. Leah has taken a test. Mark her answers and write any corrections.

$0.484 + 0.159 = 0.534$	corrections
$0.263 + 0.009 = 0.272$	
$0.152 + 0.709 = 0.811$	
$0.621 + 0.178 = 0.899$	
$0.15 + 0.029 = 0.044$	



PS

9a. Which digits could you put in the empty spaces to make this statement balance?

$$0.4 \square 4 + 0.2 \square 8 = 0.126 + 0.616$$



PS

9b. Which digits could you put in the empty spaces to make this statement balance?

$$0.79 \square + 0.1 \square 3 = 0.528 + 0.417$$



PS

Reasoning and Problem Solving

Adding Decimals Within 1

Developing

1a. Joanne is incorrect. She has added the two digits but not realised the 9 is 9 hundredths and the 1 is 1 tenth so the answer should be 0.19.

2a.

$0.83 + 0.01 = 0.09$	corrections 0.84
$0.62 + 0.26 = 8.8$	0.88
$0.34 + 0.62 = 0.96$	✓
$0.53 + 0.04 = 0.93$	0.57
$0.84 + 0.05 = 0.09$	0.89

3a. 5,8; 6,9

Expected

4a. Henri is incorrect. You work from the right to left, adding thousandths first, then hundredths and then tenths.

5a.

$0.132 + 0.828 = 0.951$	corrections 0.96
$0.703 + 0.07 = 0.71$	0.773
$0.824 + 0.011 = 0.835$	✓
$0.351 + 0.039 = 0.381$	0.39
$0.646 + 0.341 = 0.987$	✓

6a. 5,0; 6,1; 7,2; 8,3; 9,4 and 1,6

Greater Depth

7a. Amaya is incorrect. If the sum of the thousandths digits is equal to 10 thousandths, then this would be exchanged for 1 hundredth and there would be no need for the 0 (place holder) in the thousandths column if both numbers were 3 decimal places. Therefore the answer would have two decimal places.

8a.

$0.548 + 0.354 = 0.902$	corrections ✓
$0.003 + 0.879 = 0.909$	0.882
$0.172 + 0.336 = 0.409$	0.508
$0.626 + 0.275 = 0.901$	✓
$0.743 + 0.198 = 0.931$	0.941

9a. 4,9; 5,8; 6,7; 7,6; 8,5; 9,4

Reasoning and Problem Solving

Adding Decimals Within 1

Developing

1b. Rowan is incorrect. He has added the two digits but not realised that the 5 is 5 hundredths and the 1 is 1 tenth so the answer should be 0.15.

2b.

$0.03 + 0.46 = 0.53$	corrections 0.49
$0.15 + 0.4 = 0.2$	0.55
$0.04 + 0.07 = 0.74$	0.11
$0.37 + 0.42 = 0.79$	✓
$0.85 + 0.01 = 0.95$	0.86

3b. 0,2; 1,3; 2,4; 3,5; 4,6; 5,7

Expected

4b. Grace is incorrect. If the value in the tenths column is greater than 9, then you need to exchange and carry over into the ones column, so your answer would be 1 or more.

5b.

$0.971 + 0.009 = 0.98$	corrections ✓
$0.76 + 0.073 = 1.49$	0.833
$0.748 + 0.143 = 0.881$	0.891
$0.628 + 0.304 = 0.912$	0.932
$0.205 + 0.198 = 0.303$	0.403

6b. 7,0; 8,1; 9,2 and 1,9

Greater Depth

7b. Danny is correct. This is because the sum of $0.5 + 0.5 = 1$ so if we increase either of the numbers, even by one thousandth, the number will always be larger than 1. For example: $0.5 + 0.5001 = 1.001$

8b.

$0.484 + 0.159 = 0.534$	corrections 0.643
$0.263 + 0.009 = 0.272$	✓
$0.152 + 0.709 = 0.811$	0.861
$0.621 + 0.178 = 0.899$	0.799
$0.15 + 0.029 = 0.044$	0.179

9b. 2,5

Varied Fluency

Step 1: Adding Decimals Within 1

National Curriculum Objectives:

Mathematics Year 5: (5F10) [Solve problems involving number up to 3dp.](#)

Mathematics Year 5: (5M9a) [Use all four operations to solve problems involving measure \[for example, length, mass, volume, money\] using decimal notation, including scaling.](#)

Differentiation:

Developing Questions to support adding decimals within 1 using hundredths and tenths, no exchanges.

Expected Questions to support adding decimals within 1 using thousandths, hundredths and tenths, with exchanges.

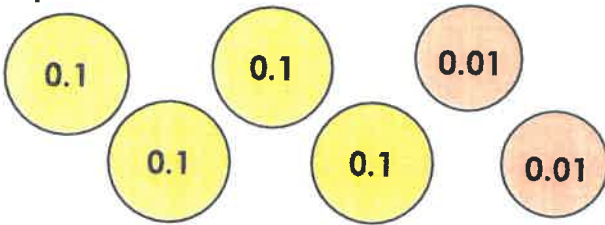
Greater Depth Questions to support adding decimals within 1 using thousandths, hundredths and tenths with multiple exchanges per question.

More [Year 5 Decimals](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Adding Decimals Within 1

1a. What number do these counters represent?



Add one more tenth.

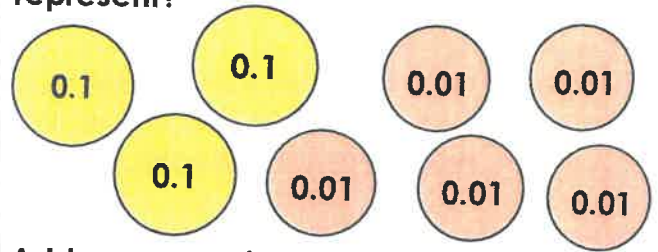
If you then add another 0.07, what number would you have?



VF

Adding Decimals Within 1

1b. What number do these counters represent?



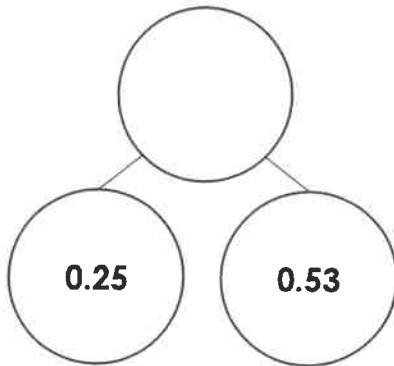
Add one more tenth.

If you then add 0.03, what number would you have?



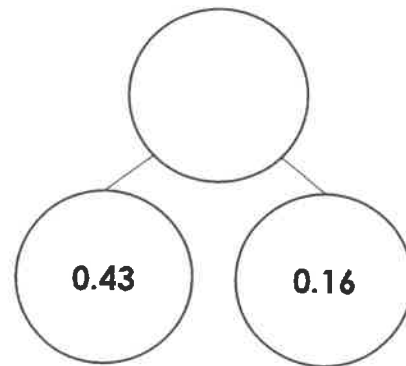
VF

2a. Complete the part whole model.



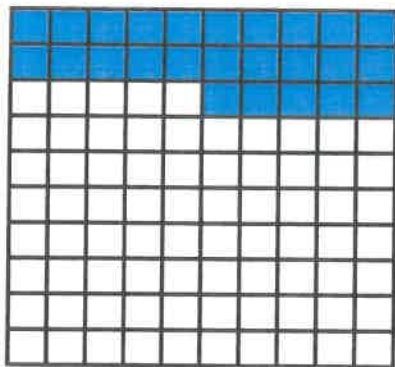
VF

2b. Complete the part whole model.



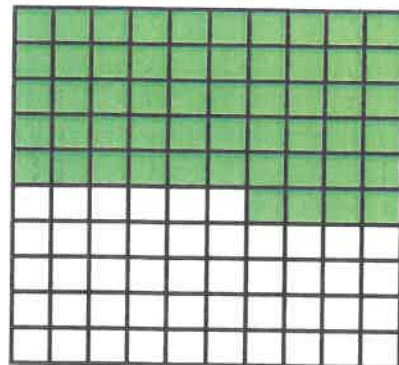
VF

3a. Use the square to add 2 hundredths. What is your answer?



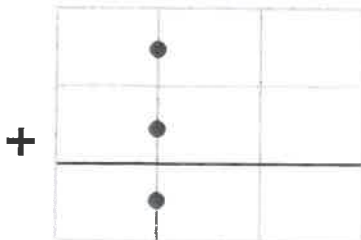
VF

3b. Use the square to add 7 hundredths. What is your answer?



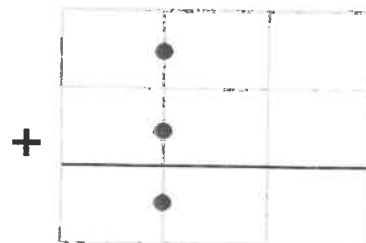
VF

4a. True or false? $0.52 + 0.02 = 7.24$



VF

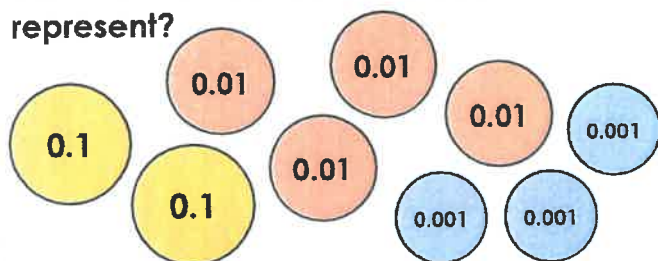
4b. True or false? $0.05 + 0.91 = 0.96$



VF

Adding Decimals Within 1

5a. What number do these counters represent?



Add one hundredth more.

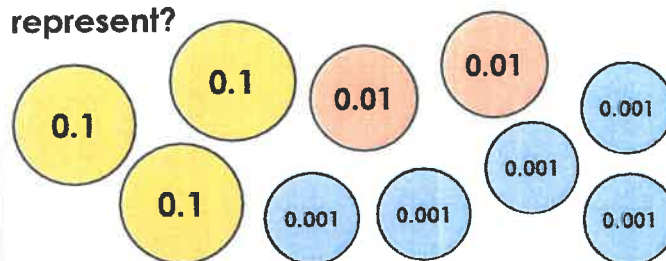
If you then add another 0.004, what number would you have?



VF

Adding Decimals Within 1

5b. What number do these counters represent?



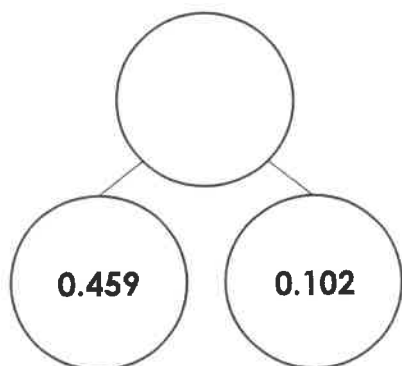
Add one hundredth more.

If you then add another 0.003, what number would you have?



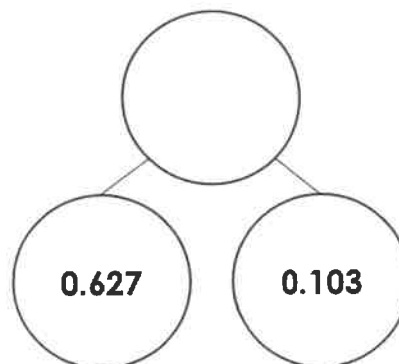
VF

6a. Complete the part whole model.



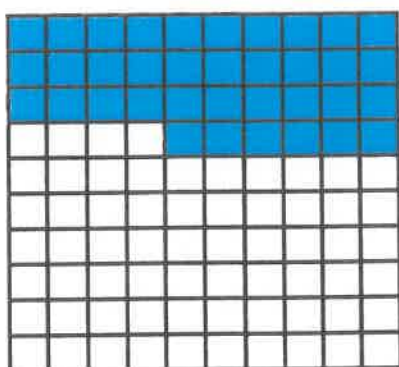
VF

6b. Complete the part whole model.



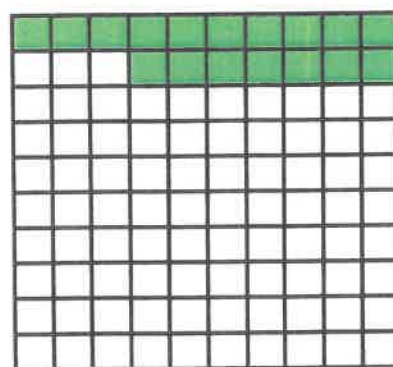
VF

7a. Use the square to add 4 tenths and 5 hundredths. What is your answer?



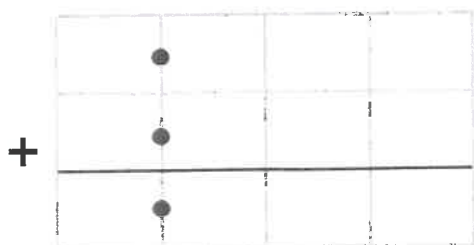
VF

7b. Use the square to add 7 tenths and 3 hundredths. What is your answer?



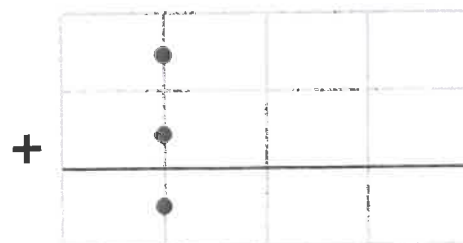
VF

8a. True or false? $0.906 + 0.025 = 0.931$



VF

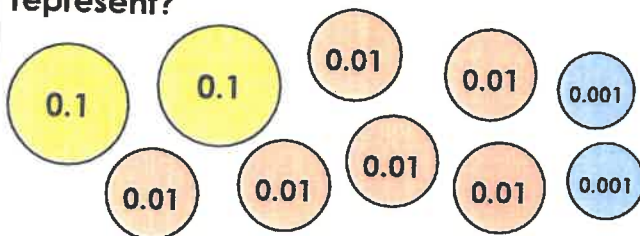
8b. True or false? $0.034 + 0.856 = 0.884$



VF

Adding Decimals Within 1

9a. What number do these counters represent?



Add on three hundredths.

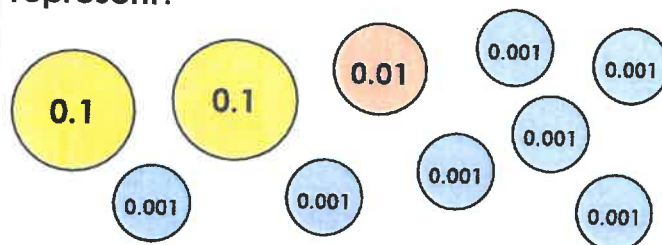
If you then add another 0.154, what number would you have?



VF

Adding Decimals Within 1

9b. What number do these counters represent?



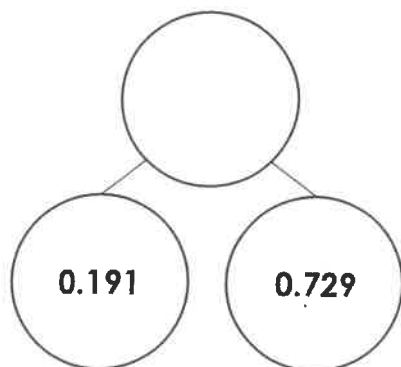
Add on nine hundredths more.

If you then add another 0.058, what number would you have?



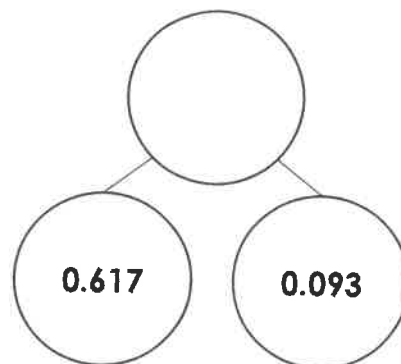
VF

10a. Complete the part whole model.



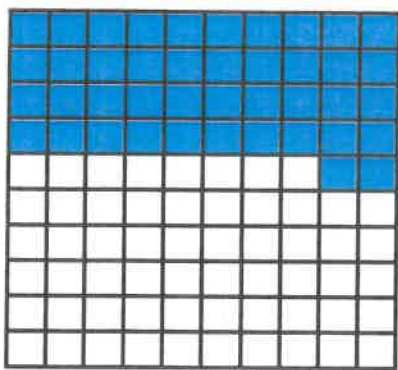
VF

10b. Complete the part whole model.



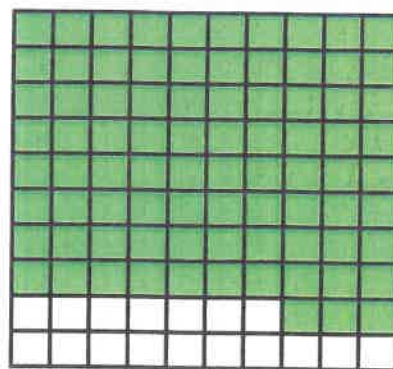
VF

11a. Use the square to add 4 tenths, 9 hundredths. What is your answer?



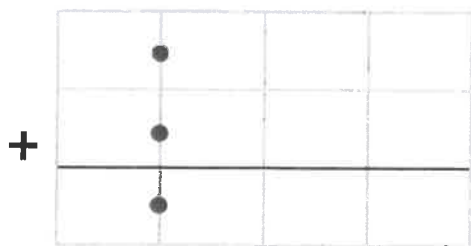
VF

11b. Use the square to add eleven hundredths. What is your answer?



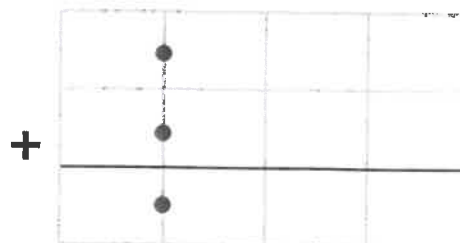
VF

12a. True or false? $0.134 + 0.789 = 0.113$



VF

12b. True or false? $0.604 + 0.298 = 0.902$



VF

Varied Fluency
Adding Decimals Within 1

Developing

1a. 0.42; 0.59

2a. 0.78

3a. $0.25 + 0.002 = 0.27$

4a. False; $0.52 + 0.02 = 0.54$

Expected

5a. 0.243; 0.257

6a. 0.561

7a. $0.36 + 0.45 = 0.81$

8a. True

Greater Depth

9a. 0.262; 0.446

10a. 0.92

11a. $0.42 + 0.49 = 0.91$

12a. False; $0.134 + 0.789 = 0.923$

Varied Fluency
Adding Decimals Within 1

Developing

1b. 0.35; 0.48

2b. 0.59

3b. $0.54 + 0.07 = 0.61$

4b. True

Expected

5b. 0.325; 0.338

6b. 0.73

7b. $0.17 + 0.73 = 0.9$

8b. False; $0.034 + 0.856 = 0.89$

Greater Depth

9b. 0.217; 0.365

10b. 0.71

11b. $0.83 + 0.11 = 0.94$

12b. True

Homework/Extension

Step 2: Subtracting Decimals Within 1

National Curriculum Objectives:

Mathematics Year 5: (5F10) [Solve problems involving number up to three decimal places](#)
Mathematics Year 5: (5M9a) [Use all four operations to solve problems involving measure \[for example, money\] using decimal notation, including scaling](#)

Differentiation:

Questions 1, 4 and 7 (Varied Fluency)

Developing Complete the part whole model. Subtracting decimals within 1 using hundredths and tenths, no exchanges.

Expected Complete the part whole model. Subtracting decimals within 1 using thousandths, hundredths and tenths, with exchanges.

Greater Depth Complete the part whole model. Subtracting decimals within 1 using thousandths, hundredths and tenths with multiple exchanges per question.

Questions 2, 5 and 8 (Varied Fluency)

Developing Complete the number sentences. Subtracting decimals within 1 using hundredths and tenths, no exchanges.

Expected Complete the number sentences. Subtracting decimals within 1 using thousandths, hundredths and tenths, with exchanges.

Greater Depth Complete the number sentences. Subtracting decimals within 1 using thousandths, hundredths and tenths with multiple exchanges per question.

Questions 3, 6 and 9 (Reasoning and Problem Solving)

Developing Provide possible distances for a given total within 1. One distance will be provided. Subtracting decimals within 1 using hundredths and tenths, no exchanges.

Expected Provide possible distances for a given total within 1. Subtracting decimals within 1 using thousandths, hundredths and tenths, no crossing columns.

Greater Depth Provide possible distances for a given total within 1 where two distances will need to add up to a given number. Subtracting decimals within 1 using thousandths, hundredths and tenths with multiple exchanges per question.

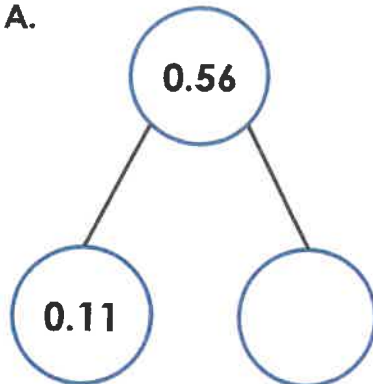
More [Year 5 Decimals](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

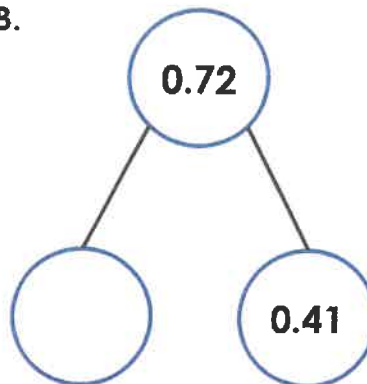
Subtracting Decimals Within 1

1. Complete the part whole models below.

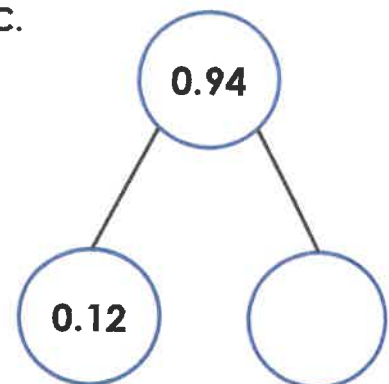
A.



B.



C.



VF
HW/Ext

2. Use the inverse operation to complete the number sentences below.

A. $0.\square\square + 0.21 = 0.85$

B. $0.74 + 0.\square\square = 0.98$

C. $0.\square\square + 0.65 = 0.79$

D. $0.54 + 0.\square\square = 0.96$

E. $0.\square\square + 0.64 = 0.89$



VF
HW/Ext

3. Three children run a total distance of 0.98 miles. Write 5 possible distances that each child could have run. One child's distance is given to you each time.

	George	John	Abigail
Possible Distance 1	0.22		
Possible Distance 2	0.41		
Possible Distance 3		0.24	
Possible Distance 4		0.36	
Possible Distance 5			0.15



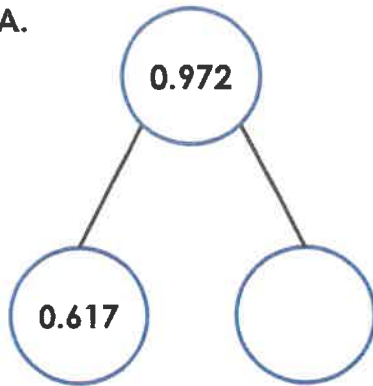
RPS
HW/Ext



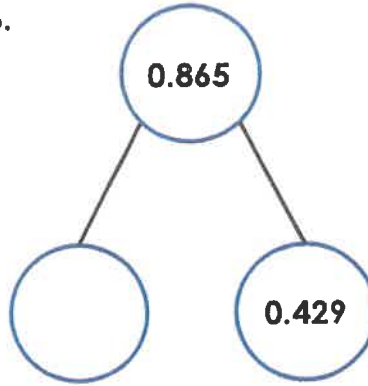
Subtracting Decimals Within 1

4. Complete the part whole models below.

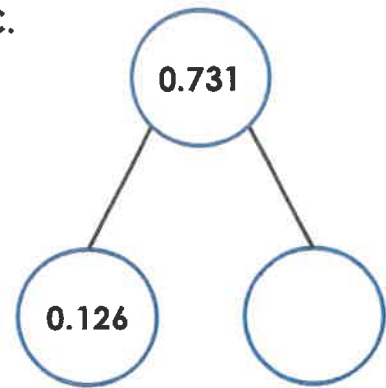
A.



B.



C.



VF
HW/Ext

5. Use the inverse operation to complete the number sentences below.

A. $0.\square\square\square + 0.02 = 0.613$

B. $0.725 + 0.\square\square\square = 0.942$

C. $0.\square\square\square + 0.77 = 0.965$

D. $0.546 + 0.\square\square\square = 0.875$

E. $0.\square\square\square + 0.419 = 0.992$



VF
HW/Ext

6. Three children run a total distance of 0.981 miles. Write 5 possible distances that each child could have run. One child's distance is given to you each time.

	Ethan	McCauley	Tegan
Possible Distance 1	0.283		
Possible Distance 2	0.159		
Possible Distance 3		0.333	
Possible Distance 4		0.419	
Possible Distance 5			0.449

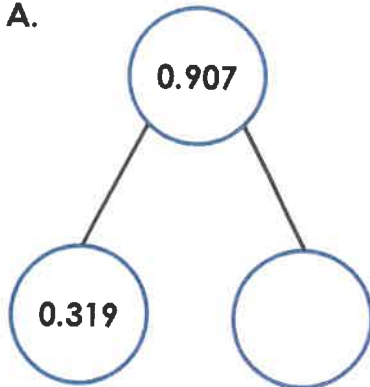


RPS
HW/Ext

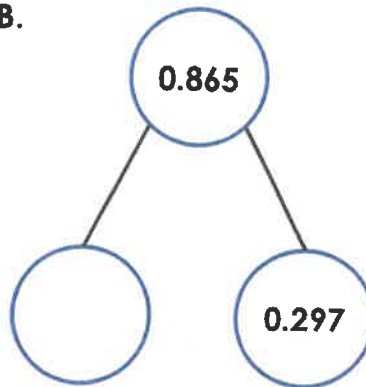
Subtracting Decimals Within 1

7. Complete the part whole models below.

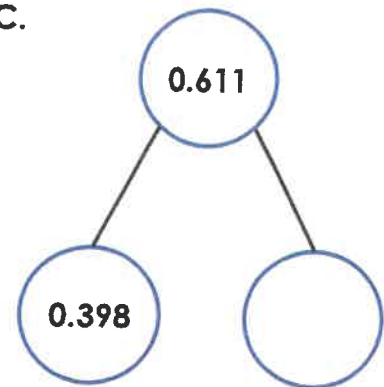
A.



B.



C.



VF
HW/Ext

8. Use the inverse operation to complete the number sentences below.

A. $0.\square\square\square + 0.179 = 0.724$

B. $0.177 + 0.\square\square\square = 0.654$

C. $0.\square\square\square + 0.688 = 0.965$

D. $0.848 + 0.\square\square\square = 0.901$

E. $0.\square\square\square + 0.473 = 0.762$



VF
HW/Ext

9. Three children run a total distance of 0.991 miles. Each time they run, 2 children run over 0.697 miles in total. Write 5 possible distances that each child could have run.

	Daniel	Joseph	Rosie
Possible Distance 1			
Possible Distance 2			
Possible Distance 3			
Possible Distance 4			
Possible Distance 5			



RPS
HW/Ext



Homework/Extension Subtracting Decimals Within 1

Developing

1. A. 0.45 B. 0.31 C. 0.82
2. A. $0.64 + 0.21 = 0.85$ B. $0.74 + 0.24 = 0.98$ C. $0.14 + 0.65 = 0.79$ D. $0.54 + 0.42 = 0.96$
E. $0.25 + 0.64 = 0.89$
3. Various possible answers, for example: 0.22, 0.44, 0.32; 0.41, 0.34, 0.23; 0.51, 0.24, 0.23;
0.24, 0.36, 0.38; 0.45, 0.38, 0.15

Expected

4. A. 0.355 B. 0.436 C. 0.605
5. A. $0.593 + 0.02 = 0.613$ B. $0.725 + 0.217 = 0.942$ C. $0.888 + 0.77 = 0.965$
D. $0.546 + 0.329 = 0.875$ E. $0.573 + 0.419 = 0.992$
6. Various possible answers, for example: 0.283, 0.254, 0.444; 0.159, 0.642, 0.18; 0.333, 0.4,
0.248; 0.4, 0.419, 0.162; 0.289, 0.243, 0.449

Greater Depth

7. A. 0.588 B. 0.568 C. 0.213
8. A. $0.545 + 0.179 = 0.724$ B. $0.177 + 0.477 = 0.654$ C. $0.277 + 0.688 = 0.965$
D. $0.848 + 0.53 = 0.901$ E. $0.289 + 0.463 = 0.762$
9. Various possible answers, for example: 0.391, 0.4, 0.2; 0.456, 0.252, 0.283; 0.1, 0.781,
0.11; 0.25, 0.501, 0.24; 0.23, 0.51, 0.251

Reasoning and Problem Solving

Step 2 - Subtracting Decimals Within 1

National Curriculum Objectives:

Mathematics Year 5: (5F10) [Solve problems involving number up to 3dp.](#)

Mathematics Year 5: (5M9a) [Use all four operations to solve problems involving measure \[for example, length, mass, volume, money\] using decimal notation, including scaling.](#)

Differentiation:

Questions 1, 4, 7 (Problem Solving)

Developing Understand and evaluate statements linked to subtracting decimals to 2 decimal places, using $<$, $>$ and $=$, no exchanging.

Expected Understand and evaluate statements linked to subtracting decimals to 3 decimal places, using $<$, $>$ and $=$, with one incidence of exchanging.

Greater Depth Understand and evaluate statements linked to subtracting decimals to 3 decimal places, using $<$, $>$ and $=$, with multiple exchanges.

Questions 2, 5, 8 (Problem Solving)

Developing Calculate difference of numbers with 2 decimal places, no exchanging.

Expected Calculate difference of numbers with 3 decimal places, one exchange.

Greater Depth Calculate difference of numbers with 3 decimal places multiple exchanges.

Questions 3, 6, 9 (Reasoning)

Developing Use a choice of 4 digits to create a subtraction within 1 (with 2 decimal places). Compare achievable amounts with prediction given.

Expected Use a choice of 6 digits to create a subtraction within 1 (with 3 decimal places). Compare achievable amounts with prediction given using $<$ or $>$.

Greater Depth Use a choice of 7 digits to create a subtraction within 1 (with 3 decimal places). Compare achievable amounts with prediction given using a value range.

More [Year 5 Decimals](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Subtracting Decimals Within 1

1a. Jesse solved these number sentences using $<$, $>$ or $=$



$$0.43 - 0.21 > 0.21 + 0.34$$

$$0.94 - 0.04 < 0.09$$

$$0.72 - 0.22 = 0.31 + 0.19$$

$$0.4 - 0.03 > 0.07 + 0.3$$

Has she solved them correctly? Correct any mistakes you find.



PS

Subtracting Decimals Within 1

1b. Denise solved these number sentences using $<$, $>$ or $=$



$$0.82 - 0.61 > 0.1 + 0.34$$

$$0.04 + 0.04 = 0.6 + 0.2$$

$$0.1 - 0.04 = 0.3 + 0.3$$

$$0.96 - 0.43 < 0.22 + 0.33$$

Has she solved them correctly? Correct any mistakes you find.



PS

2a. Dogs need to be 0.79 m tall to enter the 'big dog' category at the dog show.

Geoff	0.54 m
Moss	0.86 m
Peanut	0.63 m
Foster	0.72 m
Trigger	0.77 m

Which dog is nearest to the category? By how much did they all miss out?



PS

2b. A carpenter is cutting lengths of wood from planks which are 0.85m in length.

1	0.34 m
2	0.53 m
3	0.12 m
4	0.74 m
5	0.83 m

How much waste does each cut create?



PS

3a. Using the digit cards below for subtraction, Fionn thinks the smallest number he can make is 0.2

4	7	2	8
---	---	---	---

$$\begin{array}{r} 0. \\ - 0. \\ \hline 0. \end{array}$$

Is he correct? Explain your answer.



R

3b. Using the digit cards below for subtraction, Jessica thinks the largest number she can make will be > 0.5 .

6	2	8	4
---	---	---	---

$$\begin{array}{r} 0. \\ - 0. \\ \hline 0. \end{array}$$

Is she correct? Explain your answer.



R

Subtracting Decimals Within 1

4a. Kamal solved these number sentences using $<$, $>$ or $=$



$$0.882 - 0.764 < 0.201 + 0.48$$

$$0.394 - 0.146 > 0.2$$

$$0.164 - 0.04 < 0.002 + 0.122$$

$$0.67 - 0.393 < 0.3 - 0.13$$

Has he solved them correctly? Show why you think so correcting any mistakes you find.



PS

Subtracting Decimals Within 1

4b. Jonnie solved these number sentences using $<$, $>$ or $=$



$$0.95 - 0.141 = 0.701 + 0.038$$

$$0.114 - 0.008 > 0.892 - 0.786$$

$$0.474 - 0.04 = 0.47$$

$$0.1 + 0.009 < 0.546 - 0.455$$

Has he solved them correctly? Show why you think so correcting any mistakes you find.



PS

5a. Anna's running schedule has her covering 0.854km per day. Her trainer advised her to walk to warm up then run each day as follows:

Mon	0.263 km
Tues	0.447 km
Wed	0.568 km
Thurs	0.734 km
Fri	0.8 km

How far did she walk to warm up each day?



PS

5b. Class 5 are having a sponsored sunflower growing competition. To meet their target, the flower needs to grow 0.423cm every two days.

Mon	0.116 cm
Wed	0.309 cm
Fri	0.067 cm
Mon	0.16 cm
Wed	0.006 cm

How much have they missed their target by each day?



PS

6a. Using the digit cards below for subtraction, Kayla thinks the smallest number she can make will be > 0.1

7	3	9	5	4	1
---	---	---	---	---	---

$$\begin{array}{r} 0. \\ - 0. \\ \hline 0. \end{array}$$

Is she correct? Explain your answer.



R

6b. Using the digit cards below for subtraction, Riley thinks the largest number he can make will be > 0.9

7	2	5	8	7	0
---	---	---	---	---	---

$$\begin{array}{r} 0. \\ - 0. \\ \hline 0. \end{array}$$

Is he correct? Explain your answer.



R

Subtracting Decimals Within 1

7a. Graham solved these number sentences using $<$, $>$ or $=$



$$0.513 - 0.064 < 0.01 + 0.008$$

$$0.94 - 0.046 > 0.086 + 0.808$$

$$0.784 - 0.096 = 0.992 - 0.304$$

$$0.973 - 0.073 < 0.134 + 0.766$$

Has he solved them correctly? Show why you think so correcting any mistakes you find.



PS

Subtracting Decimals Within 1

7b. Amaya solved these number sentences using $<$, $>$ or $=$



$$0.195 - 0.149 = 0.792 - 0.753$$

$$0.472 - 0.385 > 0.673 - 0.596$$

$$0.474 - 0.08 < 0.953 - 0.569$$

$$0.009 + 0.594 < 0.607 - 0.004$$

Has she solved them correctly? Show why you think so correcting any mistakes you find.



PS

8a. Children must be 0.985m tall to ride the Rocket Launcher ride alone.

Timmy	0.983 m
Keeley	0.576 m
Honey	0.895 m
Jon	0.747 m
Libby	0.795 m

How much does each child have to grow to ride the Rocket Launcher?



PS

8b. Joe needs to knit at least 0.673m of his pattern each day to complete the garment by the weekend. This is his knitting record.

Mon	0.673 m
Tues	0.567 m
Wed	0.684 m
Thurs	0.43 m
Fri	0.098 m

How far off his target is he each day?



PS

9a. Using the digit cards below for subtraction, Connor thinks the smallest number he can make will be:

$$< 0.01 \text{ and } > 0.004$$

8	9	2	3	5	1	0
		0	.			
-		0	.			
		0	.			

Is he correct? Explain your answer.



R

9b. Using the digit cards below for subtraction, Robyn thinks the largest number he can make will be:

$$< 0.846 \text{ and } > 0.832$$

7	2	7	1	8	9	3
		0	.			
-		0	.			
		0	.			

Is he correct? Explain your answer.



R

Reasoning and Problem Solving Subtracting Decimals Within 1

Developing

- 1a. Incorrect $0.22 < 0.55$; incorrect $0.9 > 0.09$; correct $0.5 = 0.5$; incorrect $0.37 = 0.37$
2a. 0.25m , $+0.07\text{m}$, 0.16m , 0.07m , 0.02m .
Moss is in the 'big dog' category; Trigger is the closest to qualifying.
3a. Incorrect. Various possible answers, including: $0.47 - 0.28 = 0.19$

Expected

- 4a. Correct $0.118 < 0.681$; correct $0.248 > 0.2$; incorrect $0.124 = 0.124$; incorrect $0.277 > 0.17$
5a. 0.591km , 0.407km , 0.286km , 0.12km , 0.054km
6a. Incorrect. Various possible answers, including: $0.513 - 0.497 = 0.016$

Greater Depth

- 7a. Incorrect $0.449 > 0.018$; incorrect $0.894 = 0.894$; correct $0.688 = 0.688$; incorrect $0.9 = 0.9$
8a. 0.002m , 0.409m , 0.09m , 0.238m , 0.19m
9a. Incorrect because $0.301 - 0.298 = 0.003$

Reasoning and Problem Solving Subtracting Decimals Within 1

Developing

- 1b. Incorrect $0.21 < 0.44$; incorrect $0.08 < 0.8$; incorrect $0.06 < 0.6$; correct $0.53 < 0.55$
2b. 0.51m , 0.32m , 0.73m , 0.11m , 0.02m
3b. Correct; $0.86 - 0.24 = 0.62$

Expected

- 4b. Incorrect $0.809 > 0.739$; incorrect $0.106 = 0.106$; incorrect $0.434 < 0.47$; incorrect $0.109 > 0.091$
5b. 0.307cm , 0.114cm , 0.356cm , 0.263cm , 0.417cm
6b. Incorrect. Taking the smallest number away from the largest number gives an answer < 0.9

Greater Depth

- 7b. Incorrect $0.046 > 0.039$; correct $0.087 > 0.077$; incorrect $0.394 > 0.384$; correct $0.603 = 0.603$
8b. 0m , 0.106m , $+0.011\text{m}$, 0.243m , 0.575m
9b. Incorrect because $0.987 - 0.123 = 0.864$

Homework/Extension

Step 1: Decimals up to 2 d.p

National Curriculum Objectives:

Mathematics Year 5: (5F8) [Read, write, order and compare numbers with up to three decimal places](#)

Mathematics Year 5: (5F10) [Solve problems involving number up to three decimal places](#)

Differentiation:

Questions 1, 4 and 7 (Varied Fluency)

Developing State which number has the lowest value of a given digit. Image support and place value grid provided.

Expected State which number has the lowest value of a given digit. Place value grid provided.

Greater Depth State which number has the lowest value of a given digit. No image or place value grid provided.

Questions 2, 5 and 8 (Varied Fluency)

Developing Write the number that is represented in each place value grid. Includes conventional partitioning and images to support.

Expected Write the number that is represented in each place value grid. Includes some unconventional partitioning and images for support.

Greater Depth Write the number that is represented in each number sentence. Includes unconventional partitioning.

Questions 3, 6 and 9 (Reasoning and Problem Solving)

Developing Explain and correct the mistake. Includes conventional partitioning and images to support.

Expected Explain and correct the mistake. Includes some unconventional partitioning and images for support.

Greater Depth Explain and correct the mistake. Includes unconventional partitioning.

More [Year 5 Decimals and Percentages](#) resources.

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Decimals up to 2 d.p

1. In which number does the 2 have the lowest value?

Ones	Tenths	Hundredths
1 1	0.1 0.1 0.1 0.1	0.01 0.01 0.01

Ones	Tenths	Hundredths
1 1 1 1 1	0.1 0.1 0.1	0.01 0.01

Ones	Tenths	Hundredths
1 1 1	0.1 0.1	0.01 0.01 0.01 0.01 0.01



VF
HW/Ext

2. Write the number represented by each place value grid.

A.

Ones	Tenths	Hundredths
1	0.1 0.1 0.1	0.01 0.01 0.01 0.01 0.01

B.

Ones	Tenths	Hundredths
1 1		0.01 0.01 0.01 0.01 0.01 0.01



VF
HW/Ext

3. Kathryn has some counters on her place value grid.

She says,



I add 2 ones,
3 tenths and a
hundredth
counter. My
new number is
3.37.

Ones	Tenths	Hundredths
1	0.1 0.1	0.01 0.01 0.01 0.01

Explain and correct Kathryn's mistake.



RPS
HW/Ext

Decimals up to 2 d.p

4. In which number does the 4 have the lowest value?

Ones	Tenths	Hundredths
1	<u>4</u>	5

Ones	Tenths	Hundredths
<u>4</u>	1	5

Ones	Tenths	Hundredths
1	5	<u>4</u>



VF
HW/Ext

5. Write the number represented by each place value grid.

A.

Ones	Tenths	Hundredths
1 1	0.1 0.1 0.1	0.01 0.01 0.01
	0.1 0.1 0.1	0.01 0.01 0.01
	0.1 0.1 0.1	0.01 0.01 0.01
	0.1 0.1 0.1	

B.

Ones	Tenths	Hundredths
	0.1 0.1 0.1	0.01 0.01 0.01
	0.1 0.1 0.1	0.01 0.01 0.01
	0.1 0.1 0.1	0.01 0.01
	0.1	



VF
HW/Ext

6. Lee has some counters on his place value grid.

He says,



I add 1 ten, 2 tenths and 3 hundredths.
My new number is 13.105.

Tens	Ones	Tenths	Hundredths
	1 1	0.1 0.1	0.01 0.01
	1	0.1 0.1	
		0.1 0.1	
		0.1 0.1	

Explain and correct Lee's mistake.



RPS
HW/Ext

Decimals up to 2 d.p

7. In which number does the 8 have the lowest value?

3.84

3.08

8.34

80.34

38.04



VF
HW/Ext

8. Write the number represented by each sentence.

A.

18 tenths + 4 hundredths

B.

2 ones + 6 tenths + 13 hundredths

C.

5 ones + 23 hundredths



VF
HW/Ext

9. Aliyah says,



I have 5 ones, 10 tenths and 9 hundredths. I add 20 ones, 2 tenths, and take away a hundredth. My new number is 25.28.

Tens	Ones	Tenths	Hundredths

Explain and correct Aliyah's mistake.



RPS
HW/Ext

Homework/Extension

Decimals up to 2 d.p

Developing

1. **5.32**
2. **A. 1.35, B. 2.06**
3. **Kathryn has added 1 tenth and 3 hundredths instead of the other way round. Her new number is 3.55.**

Expected

4. **1.54**
5. **A. 3.29, B. 1.08**
6. **Lee has not exchanged the 10 tenths for a one. His new number is 14.05.**

Greater Depth

7. **3.08**
8. **A. 1.84, B. 2.73, C. 5.23**
9. **Aliyah has not exchanged the 10 tenths to for a one but has counted them as 1 tenth. Her new number is 26.28.**

Reasoning and Problem Solving

Step 1: Decimals up to 2d.p.

National Curriculum Objectives:

Mathematics Year 5: (5F8) [Read, write, order and compare numbers with up to three decimal places](#)

Mathematics Year 5: (5F10) [Solve problems involving number up to three decimal places](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Read each decimal to identify the odd one out. Includes conventional partitioning and images for support.

Expected Read each decimal to identify the odd one out. Includes the use of zero as a place holder, some unconventional partitioning and images for support.

Greater Depth Read each decimal to identify the odd one out. Includes the use of zero as a place holder, unconventional partitioning and no images for support.

Questions 2, 5 and 8 (Problem Solving)

Developing Use clues to identify a number. Includes conventional partitioning and one possible answer.

Expected Use clues to identify a number. Includes some unconventional partitioning and several possible answers.

Greater Depth Use several clues to identify a number. Includes unconventional partitioning and several possible answers.

Questions 3, 6 and 9 (Reasoning)

Developing Explain whether partitioning has been completed correctly. Includes conventional partitioning and images for support.

Expected Explain whether partitioning has been completed correctly. Includes the use of zero as a place holder, some unconventional partitioning and images for support.

Greater Depth Explain whether partitioning has been completed correctly. Includes the use of zero as a place holder, unconventional partitioning and no images for support.

More [Year 5 Decimals and Percentages](#) resources.

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Decimals up to 2d.p.

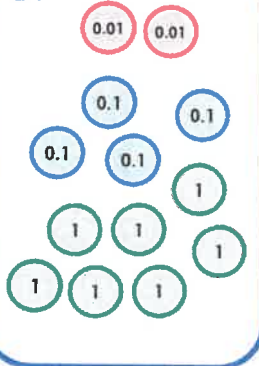
1a. Spot the odd one out.

A. $7 + 0.2 + 0.04$

B. seven ones, two tenths and four hundredths

C. 7.24

D.



Explain your answer fully.



R

Decimals up to 2d.p.

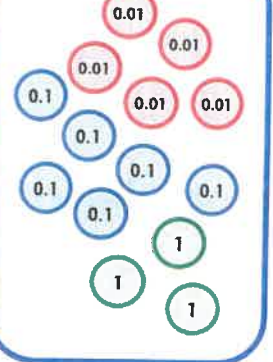
1b. Spot the odd one out.

A. $3 + 0.6 + 0.05$

B. three ones, five tenths and six hundredths

C. 3.65

D.



Explain your answer fully.



R

2a. Jack is thinking of a number.



My number lies
between
 $8 + 0.3 + 0.07$
and $8 + 0.3 + 0.05$

What number is Jack thinking of?



PS

2b. Martha is thinking of a number.



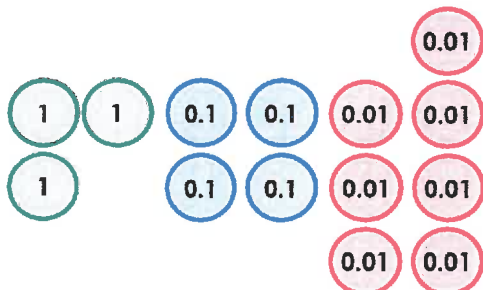
My number lies
between
 $5 + 0.9 + 0.03$
and $5 + 0.9 + 0.01$

What number is Martha thinking of?



PS

3a. Matt has used place value counters to partition 4.73.

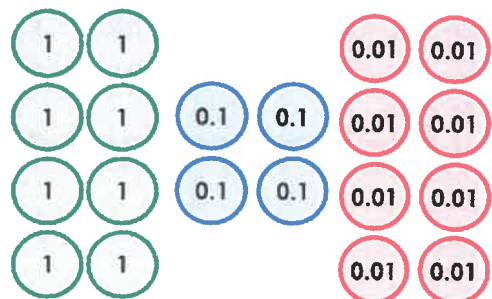


Is he correct? Prove it.



R

3b. Anju has used place value counters to partition 8.84.



Is she correct? Prove it.



R

Decimals up to 2d.p.

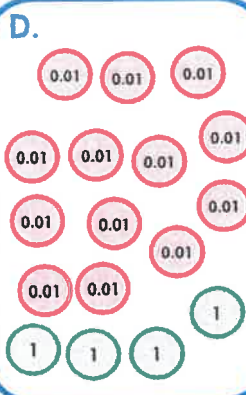
Decimals up to 2d.p.

4a. Spot the odd one out.

A. $4 + 1.3$

B. four ones, one tenth and three hundredths

C. 4.13



Explain your answer fully.



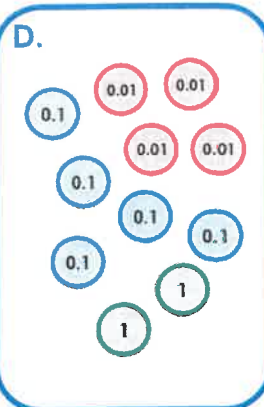
R

4b. Spot the odd one out.

A. $2 + 0.4 + 0.14$

B. two ones, five tenths and four hundredths

C. 2.45



Explain your answer fully.



R

5a. Rob is thinking of a number.



My number lies between
 $4 + 0.6 + 0.08$
and $4 + 0.5 + 0.12$

What number is Rob thinking of? Is there more than one possible answer?



PS

5b. Sunita is thinking of a number.



My number lies between
 $7 + 0.3 + 0.09$
and $7 + 0.2 + 0.13$

What number is Sunita thinking of? Is there more than one possible answer?



PS

6a. Pete has used place value counters to partition 2.09.

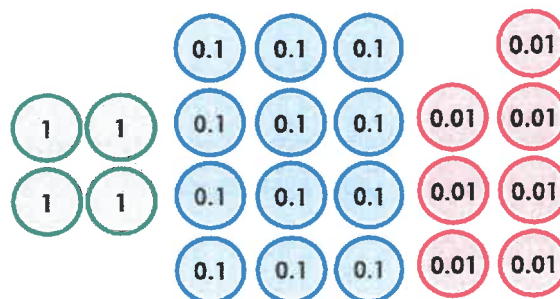


Is he correct? Prove it.



R

6b. Tiana has used place value counters to partition 4.27.



Is she correct? Prove it.



R

Decimals up to 2d.p.

Decimals up to 2d.p.

7a. Spot the odd one out.

A. $60 + 1 + 0.7 + 0.08$

B. 6 tens, 1 one, 7 tenths and 18 hundredths

C. $50 + 11 + 0.6 + 0.18$

D. 4 tens + 21 ones + 5 tenths + 28 hundredths

Explain your answer fully.



R

7b. Spot the odd one out.

A. $70 + 17 + 0.28$

B. 6 tens, 27 ones and 28 hundredths

C. $80 + 7 + 0.2 + 0.08$

D. 8 tens + 5 ones + 12 tenths + 8 hundredths

Explain your answer fully.



R

8a. Jai is thinking of a number.



My number lies between $6 + 0.7 + 0.14$ and $6 + 0.4 + 0.27$. The hundredth is an even number.

What number is Jai thinking of? Is there more than one possible answer?



PS

8b. Tammy is thinking of a number.



My number lies between $10 + 13 + 0.3 + 0.13$ and $20 + 3 + 0.1 + 0.16$. The hundredth is an odd number.

What number is Tammy thinking of? Is there more than one possible answer?



PS

9a. Oscar has attempted to partition 34.82.

two tens + fourteen ones + seven tenths + twenty-two hundredths

Is he correct? Prove it.



R

9b. Melissa has attempted to partition 23.08.

two tens + three hundred and eighty hundredths

Is she correct? Prove it.



R

Reasoning and Problem Solving Decimals up to 2d.p.

Developing

- 1a. D is the odd one out as it represents 7.42. The others represent 7.24.
2a. 8.36
3a. Matt is incorrect as he has made 3.47 instead of 4.73.

Expected

- 4a. A is the odd one out as it represents 5.3. The others represent 4.13.
5a. 4.63, 4.64, 4.65, 4.66 or 4.67
6a. Pete is correct as 10 tenths is the same as 1.

Greater Depth

- 7a. B is the odd one out as it represents 61.88. The others represent 61.78.
8a. 6.68, 6.70, 6.72, 6.74, 6.76, 6.78, 6.80 or 6.82
9a. Oscar is incorrect as his partitioned number makes 34.92 instead of 34.82

Reasoning and Problem Solving Decimals up to 2d.p.

Developing

- 1b. B is the odd one out as it represents 3.56. The others represent 3.65.
2b. 5.92
3b. Anju is incorrect as she has made 8.48 instead of 8.84.

Expected

- 4b. C is the odd one out as it represents 2.45. The others represent 2.54.
5b. 7.34, 7.35, 7.36, 7.37 or 7.38
6b. Tiana is incorrect as she has made 5.27 instead of 4.27.

Greater Depth

- 7b. D is the odd one out as it represents 86.28. The others represent 87.28.
8b. 23.27, 23.29, 23.31, 23.33, 23.35, 23.37, 23.39 or 23.41
9b. Melissa is incorrect as her partitioned number makes 23.8 instead of 23.08

Varied Fluency

Step 1: Decimals up to 2d.p.

National Curriculum Objectives:

Mathematics Year 5: (5F8) [Read, write, order and compare numbers with up to three decimal places](#)

Mathematics Year 5: (5F10) [Solve problems involving number up to three decimal places](#)

Differentiation:

Developing Questions to support reading, writing and understanding the value of digits up to 2 decimal places. Includes conventional partitioning and images for support.

Expected Questions to support reading, writing and understanding the value of digits up to 2 decimal places. Includes the use of zero as a place holder, some unconventional partitioning and images for support.

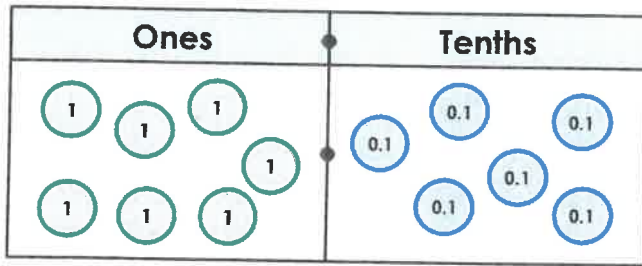
Greater Depth Questions to support reading, writing and understanding the value of digits up to 2 decimal places. Includes the use of zero as a place holder, unconventional partitioning and no images for support.

More [Year 5 Decimals and Percentages](#) resources.

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Decimals up to 2d.p.

1a. Circle the decimal number that is represented on the place value chart.



A. 7.06

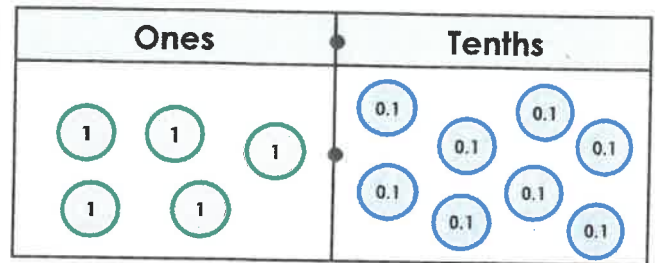
B. 6.7

C. 7.6

VF

Decimals up to 2d.p.

1b. Circle the decimal number that is represented on the place value chart.



A. 8.5

B. 5.8

C. 5.08

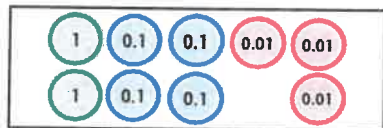
VF

2a. Match each decimal number to the correct visual representation.

A.

4.2

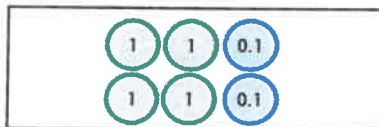
1.



B.

1.24

2.



C.

2.43

3.



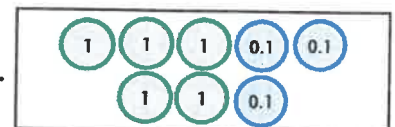
VF

2b. Match each decimal number to the correct visual representation.

A.

2.43

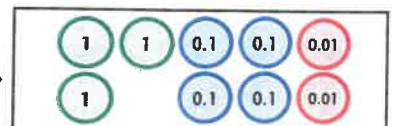
1.



B.

3.42

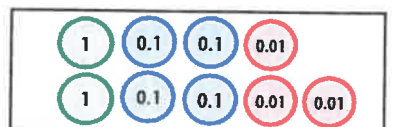
2.



C.

5.3

3.



VF

3a. True or false?

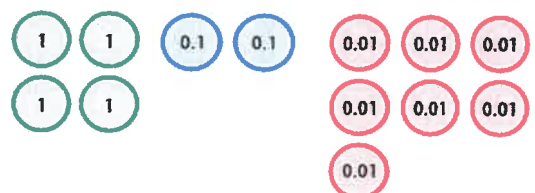
$2.15 = 2 \text{ ones} + 5 \text{ tenths} + 1 \text{ hundredth}$



VF

3b. True or false?

$4.27 = 4 \text{ ones} + 2 \text{ tenths} + 7 \text{ hundredths}$



VF

4a. In which number does the 4 have the lowest value?

2.64

6.42

4.26



VF

4b. In which number does the 3 have the highest value?

1.53

5.31

3.15

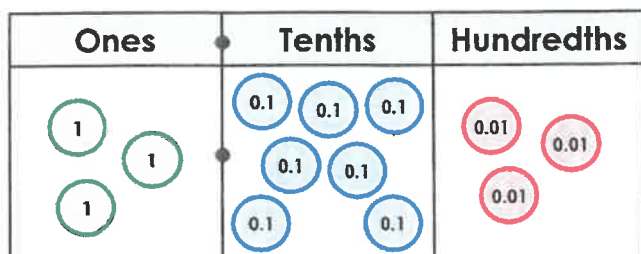


VF

Decimals up to 2d.p.

Decimals up to 2d.p.

5a. Circle the decimal number that is represented on the place value chart.



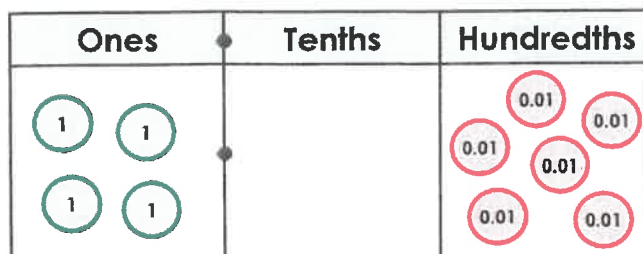
A. 3.37

B. 3.73

C. 0.73

VF

5b. Circle the decimal number that is represented on the place value chart.



A. 4.06

B. 4.6

C. 6.04

VF

6a. Match each decimal number to the correct visual representation.

A. 1.32 1.

B. 0.12 2.

C. 1.04 3.



VF

6b. Match each decimal number to the correct visual representation.

A. 0.82 1.

B. 3.41 2.

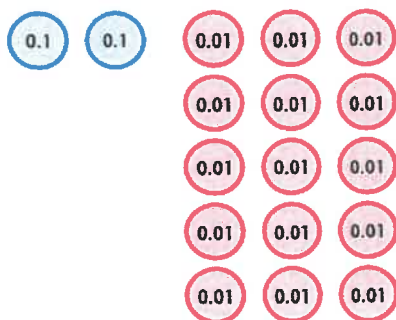
C. 1.02 3.



VF

7a. True or false?

$0.35 = 2 \text{ tenths} + 15 \text{ hundredths}$



VF

7b. True or false?

$0.64 = 6 \text{ tenths} + 14 \text{ hundredths}$



VF

8a. In which number does the 6 have the lowest value?

4.68 7.06 6.08



VF

8b. In which number does the 9 have the highest value?

5.92 3.09 9.64



VF

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Varied Fluency – Decimals up to 2d.p. – Year 5 Expected

Decimals up to 2d.p.

Decimals up to 2d.p.

9a. Circle the decimal number that is represented below.

eight tens + two ones + fourteen tenths + six hundredths

A. 82.46 B. 83.46 C. 82.146



VF

9b. Circle the decimal number that is represented below.

three tens + eleven ones + twenty-five hundredths

A. 41.025 B. 311.25 C. 41.25



VF

10a. Match each decimal number to the correct partitioned form.

A. 8.63

1.

6 ones + 38 hundredths

B. 8.36

2.

6 ones + 26 tenths + 3 hundredths

C. 6.38

3.

6 ones + 236 hundredths



VF

10b. Match each decimal number to the correct partitioned form.

A. 7.69

1.

6 ones + 79 hundredths

B. 6.79

2.

6 ones + 19 tenths + 6 hundredths

C. 7.96

3.

6 ones + 169 hundredths



VF

11a. True or false?

A. $2.74 = 2 \text{ ones} + 5 \text{ tenths} + 24 \text{ hundredths}$

B. $4.19 = 3 \text{ ones}, 11 \text{ tenths} + 9 \text{ hundredths}$



VF

11b. True or false?

A. $3.89 = 2 \text{ ones} + 28 \text{ tenths} + 9 \text{ hundredths}$

B. $23.07 = 2 \text{ tens} + 2 \text{ ones} + 107 \text{ hundredths}$



VF

12a. In which number does the 9 have the lowest value?

29.02

92.02

22.09



VF

12b. In which number does the 5 have the highest value?

74.5

45.07

74.05



VF

Varied Fluency
Decimals up to 2d.p.

Developing

- 1a. **C**
- 2a. **A2, B3, C1**
- 3a. **False. 2.15 = 2 ones, 1 tenth and 5 hundredths**
- 4a. **2.64**

Expected

- 5a. **B**
- 6a. **A3, B1, C2**
- 7a. **True**
- 8a. **7.06**

Greater Depth

- 9a. **B**
- 10a. **A2, B3, C1**
- 11a. **A = true, B = true**
- 12a. **22.09**

Varied Fluency
Decimals up to 2d.p.

Developing

- 1b. **B**
- 2b. **A3, B2, C1**
- 3b. **True**
- 4b. **3.15**

Expected

- 5b. **A**
- 6b. **A1, B3, C2**
- 7b. **False. 0.64 = 6 tenths and 4 hundredths**
- 8b. **9.64**

Greater Depth

- 9b. **C**
- 10b. **A3, B1, C2**
- 11b. **A = false (3.89 = 2 ones + 18 tenths + 9 hundredths), B = true**
- 12b. **45.07**