



Year 5 - Science skills progression

Term	Subject Knowledge Objective (where applicable)	Use all or some of the following activities to cover this objective	Working scientifically skills developed in the activities
Out of this world	Describe the movement of the Earth and other planets relative to the Sun in the Solar System. Describe the Sun, Earth and Moon as approximately spherical bodies.	1. The Solar System. 2. Modelling the solar system. 3. What is at the centre of the Solar System.	Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
Out of this world	Describe the movement of the Earth and other planets relative to the Sun in the Solar System. Describe the Sun, Earth and Moon as approximately spherical bodies	1. Copernicus and Galileo	Identify scientific evidence that has been used to support or refute ideas or arguments.
Out of this world	Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.	1. Explaining day and night. 2. The apparent movement of the sun across the sky. 3. What is a time zone?	Take measurements, using a range of scientific equipment, with increasing accuracy and precision taking repeat readings when appropriate.
Out of this world	Describe the movement of the Moon relative to the Earth.	4. The Moon. 5. Biscuit moons	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
Out of this world		6. Moon crater investigations	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs L.O. Use test results to make predictions to set up further comparative and fair test
Out of this world	Describe the movement of the Earth and other planets relative to the Sun in the Solar System.	7. Become an expert - research a planet.	Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
Material world	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.	1. Sorting materials. 2. Why that material?	Compare and group.
Material world	Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	3. Testing Materials - Which material makes the strongest carrier bag?	Use evidence to give reasons for scientific explanations.

Material world	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.	4. Testing materials - What is a thermal conductor? 5. Testing materials - Which materials are thermal conductors and which are thermal insulators? 6. Testing testing.	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Use test results to make predictions to set up further comparative and fair tests.
Material world	Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.	1. Searching for a solution. 2. Dissolving sugar	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Use test results to make predictions to set up further comparative and fair tests. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
Material world	Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating	3. Sieving. 4. Filtering.	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Use test results to make predictions to set up further comparative and fair tests.
Material world	Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.	5. Evaporating. 6. Sort this out!	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
Circle of life	Describe the life process of reproduction in some plants and animals.	1. Plant reproduction.	Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
Circle of life	Describe the life process of reproduction in some plants and animals.	2. New plants from old. 3. Plants from cuttings.	
Circle of life	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.	1. Bird life cycles. 2. Butterfly life cycle. 3. Life cycle of a frog.	Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.

Circle of life	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals.	1. Why do some animals lay so many eggs? 2. Unusual life cycles.	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Use test results to make predictions to set up further comparative and fair tests.
Circle of life	Identify scientific evidence.	3. Endangered animals	Identify scientific evidence that has been used to support or refute ideas or arguments.
Circle of life	Plan scientific enquiries.	4. For and against Zoos. 5. Meet the scientists. 6. We are conservationists.	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Identify scientific evidence that has been used to support or refute ideas or arguments
Let's get moving	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.	1. Investigating gravity. 2. Galileo and Newton. 3. Why is gravity important?	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Use test results to make predictions to set up further comparative and fair tests. Identify scientific evidence that has been used to support or refute ideas or arguments.
Let's get moving	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.	1. Falling cupcakes case 2. Parachutes.	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displ. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Use test results to make predictions to set up further comparative and fair tests. ays and other presentations.
Let's get moving	Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.	1. What is friction? 2. The big trainer test. 3. Friction search on my bike.	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
Let's get moving	Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.	1. Force of water.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Use test results to make predictions to set up further comparative and fair tests. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.

Let's get moving	Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	1. What is a machine? 2. Make a simple see-saw - a lever 3. Coat hanger catapult.	Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Use test results to make predictions to set up further comparative and fair tests. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
Let's get moving	Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	4. Using Pulleys. 5 Use a pulley to do a job.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
Let's get moving	Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	6. Gears. 7. Maths in Gears	Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. Bring in objects that have gears such as a bicycle, hand rotary whisk and children's toys so that children can explore the relationship between the cogs and how they move.
Growing up and growing old	Describe the changes as humans develop to old age.	3. Gestation periods of different animals	Investigate and describe using scientific reasoning.
Growing up and growing old	Describe the changes as humans develop to old age.	1. How do we change? 2. When can you do these things?	Investigate and describe using scientific reasoning.
Growing up and growing old	Describe the changes as humans develop to old age.	3. Being a teenager	Investigate and describe using scientific reasoning.
Growing up and growing old	Describe the changes as humans develop to old age.	1. How old is old? 2. How does it feel to get old?	Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
Growing up and growing old	Describe the changes as humans develop to old age.	3. What do older people think about getting old? 4. Live forever	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Identify scientific evidence that has been used to support or refute ideas or arguments.
Amazing changes	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.	1. Elephant's toothpaste	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
Amazing changes	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.	2. Inflating a balloon. 3. Volcanic eruption.	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Use test results to make predictions to set up further comparative and fair tests.

Amazing changes	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.	4. Making plastic	Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
Amazing changes	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.	5. Investigating rust.	Use test results to make predictions to set up further comparative and fair tests.
Amazing changes	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.	6. Burning 1. Burning fabrics	Use test results to make predictions to set up further comparative and fair tests. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
Amazing changes	Identify and explore scientific evidence.	2. New materials	Identify scientific evidence that has been used to support or refute ideas or arguments.