

Working scientifically - progression map

Questions and answers

3	4	5	6
Electricity; sorting appliances into electrical and non-electrical and based on power source Discussing materials suitable to test as conductors Animals; Sorting animals based on diet and skeleton. Identifying functions of skeletons Digestion; Find functions of digestive system Question which liquid will have greatest effect on 'teeth' Sort foods into food groups. Classification; sorting animals based on key vocabulary creating closed questions to sort animals Animal Habitats; Asking questions around habitats to determine adaptations Plants: Discuss the purpose of plant features Ask what you find inside a plant.	Light; Sorting natural and man-made light sources Asking which materials let light through Sound; Questioning how an ear works Asking how far sounds can travel Respecting the environment; Sorting man made and natural environments Questioning human impact States of matter; Sorting solids liquids gases Question how to change states of matter Rocks and solids; Sort rocks based on characteristics Create questions to group rocks Forces; Sorting magnetic and non-magnetic materials Creating questions to test friction	Electricity; Questioning how you can change and develop a circuit Forces; How can I measure gravity? How does a surface affect friction? How can we measure air resistance? Research who discovered gravity Earth and Space; Discuss evidence to support a spherical earth Research based on planets Properties of change; How can I separate materials? Sorting reversible and irreversible changes Living things and habitats; Sorting organisms Research around lifecycles of different animals Animals including Humans; Compare life stages	Light; How can we test the direction of light? What factors will change a shadow Research into parts of the eye How can I measure light? Classification; Sorting organisms Create open and closed questions to classify organisms. Research individuals' impact of classification Evolution; How have organisms adapted for environments? Who created the theory of evolution? Research the impact around evolution Heart and Lungs; What are the functions of the cardiovascular system? How does exercise effect the system?

National Curriculum statements;

LKS2:

Asking relevant questions and using different types of scientific enquiries to answer them.

Using straightforward scientific evidence to answer questions or to support their findings.

UKS2:

Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

Identifying scientific evidence that has been used to support or refute ideas or arguments.

Working scientifically - progression map

Practical enquiries

3	4	5	6
Electricity; Testing a variety of circuits Testing conductors and insulators Creating and testing switches Animals; Digestion; Testing the effect of drinks on teeth enamel Classification; Using a classification key to identify animals Animal habitats; Explore local habitat to identify features and organisms Plants; Dissection of a plant to identify parts Testing what conditions plants need for life.	Light; Testing the opacity of different materials Evaluate the effect of light on shadows Sound; Test environmental impacts on volume Identify different pitch of sounds Environment; How can we impact our local environment? States of matter; What is the most effective way to change a state of matter Rocks and soils; What is soil? Forces and magnets; Effect of surface on friction Use magnets to find magnetic and non-magnetic materials	Electricity; Creating circuits with different outputs and cells. Forces; Impact of gravity on objects Impact of air resistance Impact of weight on friction Impact of shape on water resistance Earth and space; Exploring the relative size of the universe Properties of change; What will dissolve Which changes are reversible Effect of burning materials Separating materials Living things and habitats; Animals including humans;	Light; How can I influence shadows Using reflection to look around corners. Classification; Explore a micro world (using microscope) Evolution; Circulation; Heart dissection Inflating lungs Measuring heart rates

National Curriculum statements;

LKS2:

Setting up simple practical enquiries, comparative and fair tests

UKS2:

planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary

taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate

using test results to make predictions to set up further comparative and fair tests

We have at least 30 opportunities to be explore science practically at NJS.

Working scientifically - progression map

Observations

3	4	5	6
Electricity; Testing a variety of circuits Testing conductors and insulators Animals; Digestion; Testing the effect of drinks on teeth enamel Classification; Using a classification key to identify animals Animal habitats; Explore local habitat to identify features and organisms Plants; Dissection of a plant to identify parts Testing what conditions plants need for life.	Light; How does light move? What material allow light to pass Sound; How sounds change based on materials How sound travels How can I influence sound Environment; What impacts do humans have How do different environments affect life States of matter; The properties of states The change temperature can create Rocks and soils; Different properties of rocks Permeability of rocks Forces and magnets; How magnets affect different metals The strength of polarity Magnet magic	Electricity; Influence of changing inputs and outputs What materials conduct electricity Forces; What is gravity? What is friction? What is air resistance? Earth and space; How gravity influences a planet Relative distance around the solar system Properties of change; The change temperature can create Difference in soluble and non soluble solutions Living things and habitats; Difference in environments and the affect on nature including weather Animals including humans; Changes across life stages	Light; How does light create shadow How does light affect colour Classification; How are animals categorized based on similarities and differences Evolution; Circulation; How does the blood move around our body What is the job of the heart

National Curriculum statements;

LKS2:

Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers

Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions

UKS2:

Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate

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