Progression in:	**Science**	**Subject leader:**	**Elliott Holder**

Vocabulary

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working scientifically	**Working scientifically**	**Working scientifically**	**Working scientifically**	**Working scientifically**	**Working scientifically**
equal to	exact	equivalent	increase/decrease	percentage	degree of trust
more/less than	nearest	data logger	negative numbers	distribution	tertiary source
larger/smaller	distance	outcome	Record	in/dependent	determine
most/least	contains	impact	typical	variable	analyse
same/different	property	relationship	exception	control	**Presentation**
nearly	appearance	evidence	trend	maximum/minimum	pie charts
pattern	similarity	fact/opinion	precise	sparse	mean
research	difference	data	accurate	abundant	four quadrants
non-fiction	amount	hypothesis	comparative	crucial	**Living things**
question/answer	scale	primary/secondary source	systematic	complex	(micro)organism
Equipment	gather	estimate	reliability	refute	species
timer	notice	observe	classify	generalise	microbes
ruler	link	organise	summarise	**Presentation**	evolution
tape measure	describe	identify	**Presentation**	line graph	natural selection
beaker	predict	compare	time graphs	scatter graph	adaptation
scissors	result	interpret	plot	average	competition
magnifying glass	conclude	disprove	continuous/grouped and	mode	genes
mirror	order	**Presentation**	discrete data	range	DNA
Living things	sort	present findings	**Living things**	**Equipment**	chromosomes
living	**Presentation**	frequency table	classification key	sieve	inherit(ance)
alive	pictogram	bar charts	(in)vertebrates	funnel	survival of the fittest
dead	tally chart	Carroll diagram	mould	filter paper	fossil records
move	Venn diagram	flow chart	fungus	**Living things**	**Animals including humans**
grow	**Equipment**	**Equipment**	organism	sexual and asexual	circulatory system
feed	stop-watch	apparatus	population	reproduction	blood vessels
breathe	pipette	hand lens	deforestation	interdependence	capillaries
shelter	beaker	microscope	pollution	seed formation	red/white blood cells
meat eater	weight	measuring cylinder	human impact	runners	plasma
plant feeder	thermometer	**Living things**	variation	transpiration	haemoglobin
Plants	measuring scales	climate zones	biome	**Animals including humans**	clotting
daffodil	**Living things**	vegetation belts (forest,	vegetation	fertilisation	respiratory system
daisy	(micro)habitat (and name some	grassland, tundra, desert)	region	birth	respire
dandelion	eg log, pond)	climate	environmental	embryo	carbon dioxide
leaf/leaves	microscopic	soil	**Animals including humans**	chromosomes	(de)oxygenated
flower/blossom	environment	tropical	digestive system	gestation	aerobic
trunk	conditions (and describe eg	temperate	digestion	infancy	vein/artery
branch	damp, dark)	population	saliva	**Materials**	gaseous exchange
stem	life cycle	food web	oesophagus	soluble	drugs
petal	food source	producer/consumer	stomach	solution	**Sound, light, Earth & space**
root	predator	herbivore/carnivore/omnivore	small/large intestine	solute	refraction

soil
fruit
berry
seed
bulb
Animals
fish
bird
reptile
baby
cub
nest
egg
mouth
neck
eyes
teeth
wing
claw
tail
beak
fur
feather
fin
scales
Materials
object
material
wood
plastic
glass
metal
water
rock
rough
smooth
bright/shiny
cloudy
dull/dim
strong/weak
waterproof
bendy/stiff
soft/hard
see-through
push/pull
float/sink
squash(ing)

prey
produce
reproduce
suited
adapted
Plants
growth
shoot
mature
healthy
earth (i.e. soil)
nutrients
function
Animals including humans
amphibian
mammal
adult
young
toddler
child
teenager
develop
insect
live young
Health
balanced diet
fat
sugars
vegetable
grains
beans
dairy
nuts
lifestyle
activity
heart rate
medicine
germ
Materials
man-made
natural
suitable
useful
function
purpose
property
rust

survive
characteristics
Plants
deciduous
evergreen
absorb
fertiliser
transported
pollination
pollen
Animals including humans
(in)vertebrates
offspring
survival
childhood/babyhood/adulthood
skull
ribs
spine/backbone
joints
sockets
bones
muscles
contraction
tendons
x-ray
protection
Health
dietary
nutrition
food groups
protein
fibre
carbohydrate
starches
minerals
Materials
artificial
mineral
resources
sand
silt
clay
slate
dissolve
marble
granite
sandstone

rectum
anus
faeces
excrete
chemical
breakdown
reabsorb
plaque
fluoride
tooth decay
gums
enamel
canines
incisors
pre-molars
molars
cavities
decay
Materials
oxygen
change of state
solidify
gaseous
water vapour
water cycle
precipitation
evaporation
condensation
Celsius
Sound, light, Earth & space
sound source
wave
noise
vibrate/vibration
pitch
volume
echo
Forces
electrical device
appliances
circuit
components
conductor
cell
battery
wire
bulb

solvent
suspension
filter
mixture
residue
separation
buoyancy
(ir)reversible change
conductor
thermal
insulator
insulation
combustion
reaction
Sound, light, Earth & space
axis/axes
Mercury
Venus
Mars
Jupiter
Saturn
Uranus
Neptune
Pluto
spin
sphere/spherical
rotation
elliptical orbit
revolve
asteroid
meteor(ite)
comet
galaxy
light year
latitude
longitude
equator
hemisphere
prime/Greenwich Meridian
time zone
Forces
air & water resistance
levers
pulleys
gears
cams
drag forces

Forces
simple/series/parallel circuits
voltage
power
symbols

stretch(ing) twist(ing) **Sound, light, Earth & space** weather hot cold wind rain snow ice seasons (autumn winter spring summer) day month year sun moon rainbow	transparent reflection rigid flexible solid liquid heat pressure **Sound, light, Earth & space** vegetation seasonal daily (weekly monthly etc) fortnight January, February (etc) poles equator temperature	chalk limestone quartz absorb(ent) porous (im)permeable characteristic fossil crystals layers texture powder magma lava igneous metamorphic sedimentary surface **Sound, light, Earth & space** light source (and names e.g. torch) light wave reflect(ive) mirror block/absorb opaque emit **Forces** force gravity friction magnet(ic) attract repel North/South pole bar/ring/button/horse-shoe magnet iron copper aluminium steel brass nickel	switch buzzer motor connection positive/negative crocodile clip		

Theme: Before the enquiry					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Predict Show curiosity about what might happen **Plan** Make comments about what they are going to explore/ investigate, in a context given to them **Research** Children access simple books, websites, photos, videos and other sources that are given to them	**Predict** Ask and answer simple questions about what might happen (e.g. get hotter, faster) **Plan** Give a brief overview of their plans, in a context given to them, using some science vocabulary **Research** Start to select and use a range of books, websites, photos and other sources to learn about science	**Predict** Start to frame predictions in scientific language & concepts Show understanding of 'fair testing' **Plan** Verbally explain their plans, in a context given to them, using technical vocabulary and starting to link to different types of scientific enquiry **Research** Independently select and use sources to satisfy their curiosity about science	**Predict** Frame predictions in scientific language & concepts; start to select information to inform these predictions Start to apply concepts of 'fair testing' **Plan** In a given context they explain their plans in detail, verbally and in writing, using technical vocabulary and linking to types of scientific enquiry. Start to link the planning and evaluation stages. **Research** Select and use sources to construct their own opinions about science. Start to explain usefulness and reliability (e.g. by explaining their selection choices)	**Predict** Draw on other evidence to inform their predictions (e.g. own experience, reading, media) Start to refer to concepts like reliability, significance, replicability. **Plan** Plans make links to previous investigations, and consider the relative merits of different types of scientific enquiry* in a context that is given to them (e.g. explaining which might be useful) **Research** Select, organise and use information from more than one source to construct an informed response and/or opinion. Explain the usefulness and reliability of different sources.	**Predict** Predict, using evidence, and with reference to concepts like reliability, significance, replicability **Plan** Plans scientific enquiries to answer questions of their own, linking to what they have studied, and referring to previous and future investigations **Research** Thoughtfully select, organise and use relevant information from a range of sources to inform responses, justify their opinions, and politely point out the limitations of other people's ideas

Theme: During the enquiry					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Observe Begin to use first-hand observation using senses (e.g. qualitative comments, some measurements) Use common words and phrases to talk about science Ask and answer simple questions about what they have seen/heard **Identify, Classify and Group** Make simple scientific comparisons (e.g. spot the difference between pictures) **Measure** Measure to nearest 10cm e.g. with a metre rule painted in 5cm blocks **Record** Start to make simple recordings during the enquiry process (e.g. lists, tallies)	**Observe** Use first-hand observations with some simple equipment (e.g. magnifying glass) Use everyday words but in a more precise way; occasionally use scientific vocabulary Show curiosity, e.g. voluntarily ask questions about what they have heard, read or observed **Identify, Classify and Group** Identify differences and similarities in what they observe **Measure** Measure to nearest cm (and equivalents) **Record** Make more sophisticated recordings during the enquiry process (e.g. frequency tables where the template is given)	**Observe** Use a range of observation equipment, e.g. microscope, data logging Start choosing simple scientific vocabulary instead of everyday words Start to frame questions/ answers in scientifically valid ways (e.g. about change, difference) **Identify, Classify and Group** Start categorising (i.e. suggesting umbrella terms) Start to comment on scientific changes, including suggestions about cause and effect **Measure** Start to take accurate measurements (e.g. nearest mm, gram, degree) Use simple data-logging equipment **Record** Take simple notes (i.e. abbreviations, simplified grammar) but start to include scientific language. Use jotted tables and diagrams, subdivided lists etc.	**Observe** Evaluate own observations and compare them with others' Use scientific vocabulary, often appropriately Ask and answer scientifically valid questions (e.g. about contrast, cause and effect, reliability) **Identify, Classify and Group** Categorise terms and observations Relate contrasts, changes and trends to scientific content **Measure** Make estimations and (with help) take systematic and careful measurements (e.g. clear clutter that might affect measurements) Use data loggers **Record** Take quantitative and qualitative notes that include scientific language Start to make simple calculations during the enquiry process	**Observe** Work collaboratively by building on others' observations Use scientific vocabulary (see below), explaining how it differs from everyday usage, or from near-synonyms Ask/answer valid questions (e.g. significance, confidence, replicability) **Identify, Classify and Group** Make more complex links between the differences and changes they see and the scientific content they have learnt **Measure** Start to make comments about levels of accuracy (e.g. not measuring a ball throw in mm) Take repeat readings if appropriate **Record** Make clear records of observations and other aspects of the enquiry process (e.g. sketched but labelled diagrams, on-the-cuff calculations)	**Observe** Start to apply vocabulary in sophisticated ways, for instance in different areas of science, or in other subjects. Ask/answer perceptive questions (e.g. hypothetical, extrapolatory) **Identify, Classify and Group** Make links between what they see and a range of scientific content (e.g. including content from all years) **Measure** Understand and explain why different levels of accuracy are appropriate **Record** Explain their choices about where, when and how to record an enquiry. Group and redraft into useful formats like tables, diagrams, flow-charts etc

Theme: After the enquiry					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Interpret & Conclude Using their observations and ideas to suggest answers to questions	**Interpret and conclude** Answer questions about their predictions and results (e.g. were they right?)	**Interpret and conclude** Start to link results to scientific language and subject knowledge	**Interpret and conclude** Include comments about causal relationships and link these to scientific content	**Interpret and conclude** Justify their interpretations with evidence, from their own enquiry but also external sources (e.g. from famous	**Interpret and conclude** Make comments about reliability of results, replicability, methodology

Evaluate Make simple comments about their enquiry experience **Present** Recount what they've seen or found, or draw a picture	**Evaluate** Make comments about the method (e.g. were there unforeseen variables?) **Present** Explain their findings verbally, through writing, and in age-appropriate graphic form (block diagrams, pictograms, simple tables)	Start to suggest further enquiry questions **Evaluate** Using technical vocabulary, make basic evaluations about their prediction (e.g. was it reasonable?) and methodology (e.g. was it difficult to measure?) **Present** Explain observations, results and conclusions verbally and in writing, and in age-appropriate graphic form (e.g. bar charts instead of blocks) Use IT to create more complex graphs (e.g. line graph, pie chart)	**Evaluate** Suggest improvements to their methodology, linking this to scientific knowledge **Present** Make selections to present relevant data, observations and conclusions in a variety of ways (e.g. slideshow, vlog, graphic formats) Use age-appropriate graph skills (e.g. time graphs, discrete vs continuous data)	experiments in the past, or from other curriculum areas) **Evaluate** Start to organise evaluations (e.g. breaking it down into manageable steps) Show some sensitivity/selection in their evaluations (e.g. when critiquing others, or by considering scientific ethics) **Present** Include relevant background information and evaluation (e.g. evidence base, measurement accuracy, reliability, usefulness) Use labelled diagrams, tables, classification keys, simple scatter graphs)	Link their experience to a range of scientific content (i.e. from previous years) **Evaluate** Organise evaluations carefully, selecting by relevance and linking to scientific knowledge Show an awareness of scientific ethics, and display a sensitivity when critiquing others **Present** Use a range of presentation forms to show discernment in selection, awareness of audience, and perceptive conclusions Draw complex graphs by hand (e.g. scatter/ line graphs)