



Type of Enquiry	Observing changes over time	Grouping and classifying	Noticing patterns	Research	Comparative testing	Fair testing
Definition in child friendly language	<i>Observing over time is looking at or measuring how something changes over different lengths of time</i>	<i>I can find things that are similar and things that are different and sort them into groups.</i>	<i>Noticing patterns... is about collecting lots of information, sometimes by carrying out a survey, sometimes by doing some research and using that data to help me answer my question.</i>	<i>Research is about finding out information and gathering evidence using secondary sources, e.g. books, computers and technology as well as people to answer questions.</i>	<i>Looking closely, using all senses, comparing one thing with another to find differences and changes</i>	<i>Fair testing is when you change one thing only, keeping everything else (as much as possible) the same and observe or measure the effect that this has.</i>
Key features	<p>Observing or measuring how things change over time</p> <p>Different time frames, e.g. short (afternoon/lesson), medium (days/weeks), long (seasonal change)</p> <p>Making decisions increasingly independently – what to observe, how often, using what equipment.</p>	<p>Comparing things</p> <p>Looking for similarities and identifying differences</p> <p>Establishing criteria for sorting and grouping – initially given by teacher, then own criteria</p> <p>Using a variety of ways to group and organise information, e.g. hoops, tables, branching databases, Venn diagrams, keys</p> <p>Record and communicate outcomes in different ways, increasingly creating own databases and keys.</p>	<p>Collecting and presenting data from surveys</p> <p>Using first-hand, as well as second-hand data</p> <p>Comparing and contrasting information and evidence</p> <p>Making connections, seeing links between identified patterns and growing subject knowledge</p> <p>Often biology related</p>	<p>Recognise when research from secondary sources might be useful in addition to other evidence</p> <p>Recognise what types of questions it can help answer</p> <p>Use a variety of sources, including books and people</p> <p>Become increasingly evaluative about whether sources can be trusted.</p>	<p>Carry out simple tests and make comparisons, e.g. ice cube in beaker and one covered in a sock. What happens?</p> <p>Compare several different materials, events or artefacts, controlling conditions and variables to ensure validity.</p> <p>Make observations Identify differences and changes over time</p> <p>Compare evidence and rank results according to focus of enquiry</p>	<p>Using a range of equipment increasingly accurately</p> <p>Record and present data using tables and charts (and other means of communication)</p> <p>Making connections between cause and effect</p> <p>Often physics linked starting points</p>



<p>FS</p>	<p>Observations I can notice changes that happen around me I can talk about my ideas, describing what I notice using scientific vocabulary</p>	<p>Observations I can identify things that are similar or different</p>	<p>Concluding and evaluating I can notice obvious simple patterns</p>	<p>Planning and carrying out I can talk to people about a question I've asked</p> <p>Gathering, recording and communicating I can record what I find out using words and pictures</p>	<p>Planning and carrying out I can compare one thing with another</p> <p>Gathering, recording and communicating I can talk about the changes I observe I can record my observations</p>	<p>Concluding and evaluating I can suggest when something in my test might be <u>unfair</u></p>
<p>KS1</p>	<p>Asking and answering questions I can ask questions about how (and why) things change</p> <p>Observations I can identify changes that we might observe over time I can talk about my ideas, describing what I notice using scientific vocabulary</p>	<p>Observations I can use simple scientific vocabulary to describe how things are similar or different</p> <p>Planning and carrying out I can group or match things using given criteria.</p>	<p>Planning and carrying out I can carry out a simple survey, with support</p> <p>Gathering, recording and communicating I can collect and present data in a pictogram, block graph, table or chart</p> <p>Concluding and evaluating I can notice obvious simple patterns in the evidence I've collected</p>	<p>Planning and carrying out I can talk to people about what they know that could help me answer a question I can use pictures and simple books to help me find information I can use computers and other technology to locate pictures and simple information</p> <p>Gathering, recording and communicating I can record what I find out using words and pictures</p>	<p>Planning and carrying out I can compare one thing with another</p> <p>Gathering, recording and communicating I can talk about the changes I observe I can record my observations in simple formats, e.g. words, pictures, tables or tally charts</p>	<p>Concluding and evaluating I can suggest when something in my test might be <u>unfair</u></p>
<p>LKS2</p>	<p>Asking and answering questions I can decide when a question can be answered by observing over time</p> <p>Observations I can decide what observations to make, how often they need to be made and using what equipment</p> <p>Planning and carrying out I can use a range of equipment to collect data, using standard measures</p> <p>Gathering, recording and communicating I can describe changes using scientific vocabulary</p>	<p>Asking and answering questions I can decide when identifying and classifying things might be useful as a method to use to answer a science question</p> <p>Observations I can identify observable similarities and differences to observe or measure</p> <p>Gathering, recording and communicating I can use Venn diagrams, Carroll diagrams, branching databases and keys to help me communicate what I've found out.</p>	<p>Asking and answering questions I can recognise when to look for patterns to answer a question</p> <p>Planning and carrying out I can carry out surveys, suggesting what evidence I need to collect and what equipment I could use I can describe patterns in data I collect I can notice how a pattern changes and suggest what that might mean</p>	<p>Asking and answering questions I can recognise when to use secondary sources to answer a question I can use other people's data, as well as my own, to find evidence to answer a question</p> <p>Gathering, recording and communicating I can present my information in different ways and using my own words</p>	<p>Asking and answering questions I can identify properties or features (e.g. absorbency, insulating properties) I might compare</p> <p>Planning and carrying out I can suggest how I could observe or measure the feature I am comparing I can decide what equipment I could use.</p>	<p>Asking and answering questions I can recognise when to use a fair test to answer a question</p> <p>Planning and carrying out I can plan a simple fair test, decide what data I need to collect and equipment/methods I should use I can use a range of equipment to collect data</p> <p>Gathering, recording and communicating I can record evidence using tables and charts</p> <p>Concluding and evaluating I can draw simple conclusions saying whether a test is fair or not (and why)</p>



SCIENCE

SCIENTIFIC ENQUIRY

UKS2

Asking and answering questions
I can write a clear question for my observing over time investigation

Planning and carrying out
I can decide which equipment / methods to use to collect sufficient and accurate evidence of change over time

Observations
I can decide how detailed my observations need to be and over how long they need to be made in order to answer a science question

Gathering, recording and communicating
I can talk about changes that take place over time and explain them using science subject knowledge.

Asking and answering questions
I can write a clear question for my identifying and classifying investigation

Planning and carrying out
I can decide the best method to use to sort, group and classify I can use different practical tests to help me identify differences and similarities

I can use secondary sources to provide information
I can make my own keys and branching databases

Concluding and evaluating
I can explain that I sometimes need to use more than one source of evidence in order to know how to classify things.

Asking and answering questions
I can write a clear question for my pattern seeking investigation

Planning and carrying out
I can plan specifically to collect and present data from a variety of sources in order to answer a science question

Gathering, recording and communicating
I can say whether the evidence that I've collected can be trusted (e.g. is it a big enough sample size? Is more evidence required?)

Concluding and evaluating
I can say why patterns might vary across the evidence I have collected, using subject knowledge to help in identifying relationships between data and findings

Asking and answering questions
I can write a clear question for my research using secondary data investigation

Planning and carrying out
I can decide which secondary sources of evidence to use I can decide whether other people's data is reliable / trustworthy
I can decide how best to collect and present my findings, selecting appropriate evidence for a particular purpose

Concluding and evaluating
I can use evidence to support or refute a scientific argument

Asking and answering questions
I can write a clear question for my comparative test
I can recognise when to use a comparative test to answer a question

Planning and carrying out
I can decide how to collect and present the data I've collected to help me answer my question

Concluding and evaluating
I can explain how I made the results of my test reliable

Asking and answering questions
I can write a clear question for my fair test
I can plan a fair test myself, selecting the variables I need to measure (dependent), change (independent) and keep the same (control) to produce evidence to answer my question

Planning and carrying out
I can explain how I will make/have made a test fair I can identify which variables cannot be controlled

Observations
I can use equipment accurately to make observations, take measurements and collect evidence that I need

Gathering, recording and communicating
I can record and present data appropriately

Concluding and evaluating
I can draw valid conclusions linked to my own and other evidence