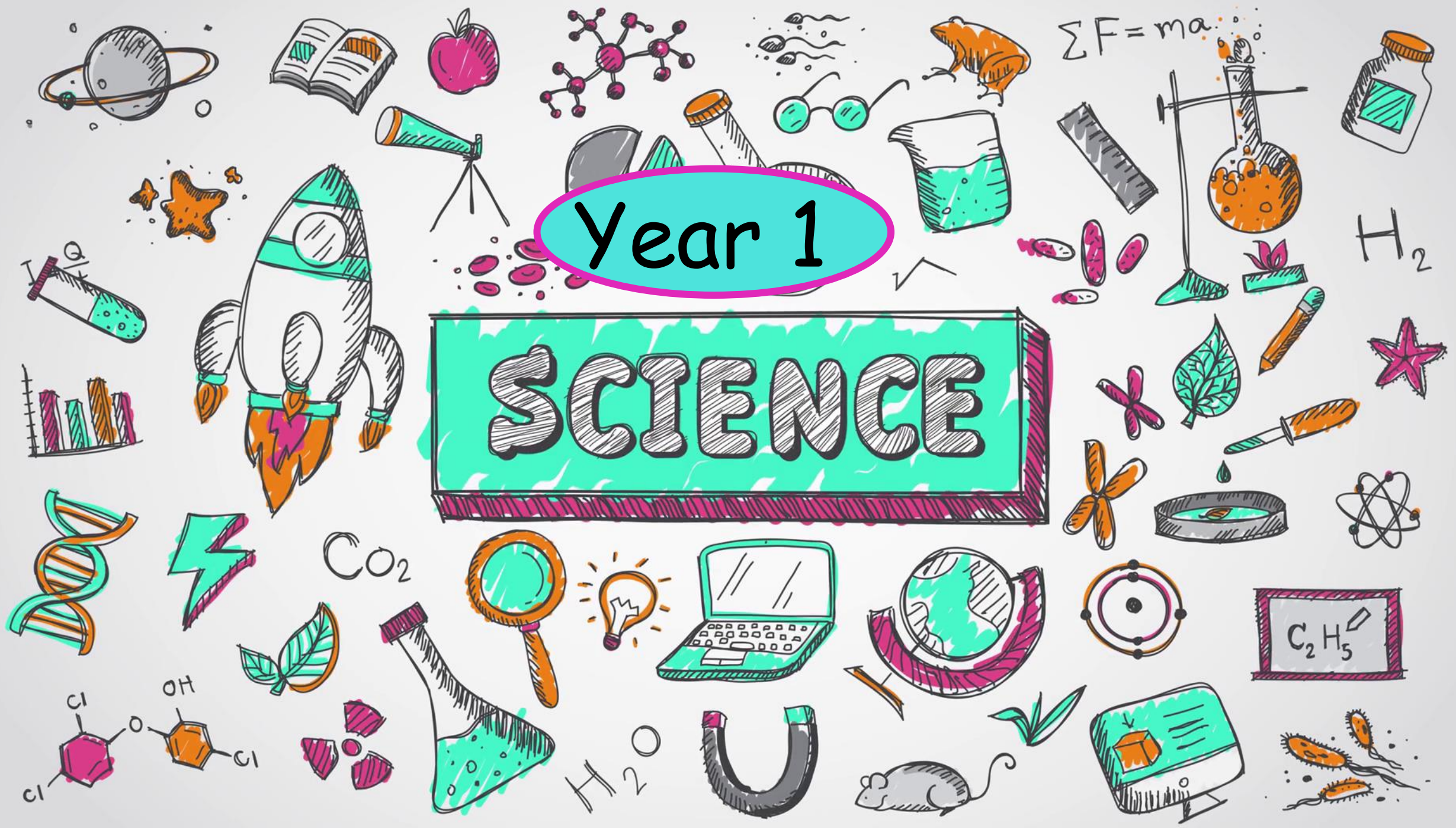
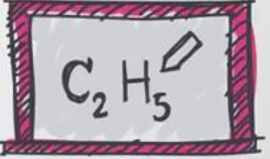
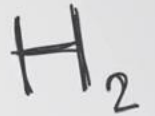


Year 1

SCIENCE



$$\Sigma F = ma$$



- Opportunities for Maths

- Recording measurements from observations.
- Creating graphs that show the data they have collected from investigations, enquiries or observations.
- Within each topic there is a short explanation about how you can use Maths in your lessons.

- Opportunities for English

- What I know, what to know and know now grids.
- Writing hypothesis and predictions.
- Oral/ written evaluations of experiments.

Recording information in books

In year 1, much of science is sorting or recording processes that the children discover. Their recording of these experiments and investigations is up to the teacher. Drawings and photographs that the children can label is most useful, but sheets for sorting or 'filling in the blanks' are other options.

Including cross-curricular links is essential in Science and it is important that any investigations/observations are recorded in the children's folders. After an 'activity lesson' we should be asking the children a question about what they have learnt so they can make predictions using the knowledge they have gained from that lesson.

When children are recording their findings they should be doing so using their mathematical knowledge to record and present their data in tables, graphs and charts.

Marking should be light touch with Reasoning questions after 'activity lessons', these can be printed for ease.

How we assess.

Assessing Knowledge of a subject.

The easiest part of our summative assessment would be the “What I know, questions I have and what I’ve learnt” grid. Children will fill in the things they have learnt at the end of a half-term. However, this isn’t going to be enough information to build a picture of a whole unit of work’s progression. Which is why we use the deeper learning questions after an ‘active lesson’ to ask questions that make the children explain their thinking and their knowledge. Teachers should use a broad range of assessment approaches, for example:

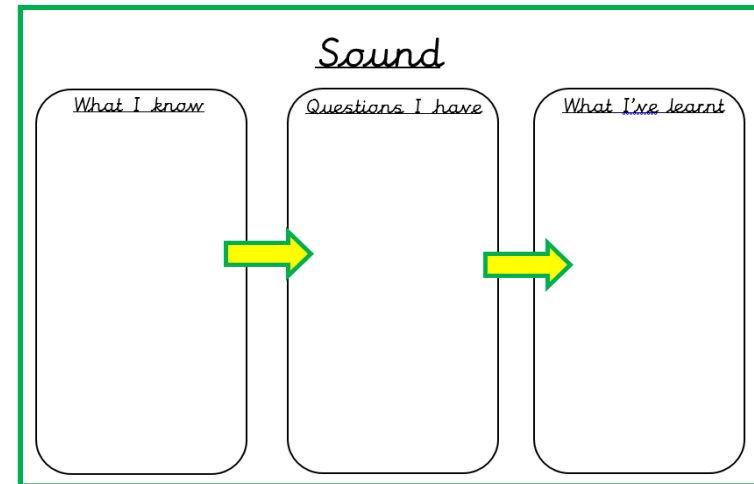
effective questioning;

KWL grids

teacher observation;

peer and self-assessment;

Deeper learning questions.



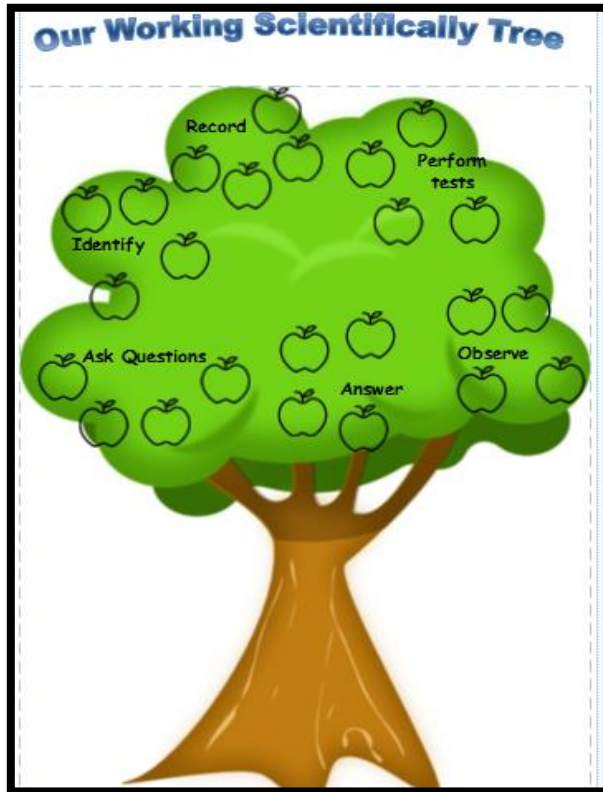
KWL grid used at the start of each topic in Science across the school.

At the end of the year teachers will moderate 2 HA, 2 MA and 2 LA children’s books to check their assessment of the children is similar.

Assessing Working Scientifically.

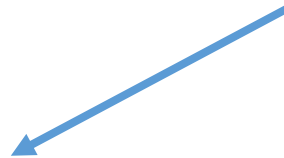
With the new scheme all children will be taking part in different experiments, investigations and observations. These are designed to meet the Working Scientifically objectives throughout the year, as well as providing the children with a range of experiences in the science curriculum.

Within each lesson there is a lesson objective as well as at least one objective in Working Scientifically. The children will have a sheet at the back of their science books that they can record how often they fulfil a WS objective. At the end of the year teachers can easily identify how well the children have met the WS objectives.



For children in KS1

The children will be directed to colour in an apple each time they have worked scientifically in a lesson.



Working Scientifically

- Asking simple questions and recognising that they can be answered in different ways
- Observing closely, using simple equipment
- Performing simple tests
- Identifying and classifying
- Using their observations and ideas to suggest answers to questions
- Gathering and recording data to help in answering questions.

Plants

- Identify and name a variety of common wild and garden plants, including deciduous (sheds its leaves annually) and evergreen (keeps its leaves) trees
- Identify and describe the basic structure of a variety of common flowering plants, including trees.

Equipment needed

Wax crayons

Chitted potatoes

tubs

Soil

KS1 investigation grids (server)

Magnifying glasses

Useful websites

https://www.hamilton-trust.org.uk/science/year-1-science/plants-whats-growing-our-gardens/?gclid=CjwKCAjw39reBRBJEiwAO1m0ObaOIUcJc3jSHdTTliQUbE8m7ot7lLzqmaKd00Oh21g4vSiGxfsk7BoCotgQAvD_BwE – direct link to the unit

[Mr Tumble grows things in his garden](#) from www.YouTube.com

Working Scientifically objective

How we can work scientifically

- Ask simple questions and recognise that they can be answered in different ways.
- Observe closely, using simple equipment.
- Perform simple tests.
- Identify and classify.
- Use their observations and ideas to suggest answers to questions.
- Gather and record data to help answer questions.

Discuss a range of fruit and vegetables and make close observations and drawings.
Identify and closely observe plants outside the school building.
Make a collective map of the garden plot, labelling the plants and predicting what they will turn into when they are fully grown.

- Ask simple questions and recognise that they can be answered in different ways.
- Observe closely, using simple equipment.
- Perform simple tests.
- Identify and classify.
- Use their observations and ideas to suggest answers to questions.
- Gather and record data to help answer questions.

Share what they already know about potatoes, including how they are grown and in what forms we can eat them.
Consider the different types of potato, including their similarities and differences.
Work in teams to prepare tubs and plant chitted potatoes.
Consider what each team needs to do to look after the potato plants.

- Identify and classify.
- Use their observations and ideas to suggest answers to questions.
- Gather and record data to help answer questions.

Look at the trees around school, how can we tell the evergreen from the deciduous? Gather some leaves and create wax rubbings and label them as evergreen or deciduous.

Animals including humans

- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
- Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.

Equipment needed

Feely bag and items

Senses Cards resource

Three covered jars with different smells inside (for example, lavender, garlic, lemon slices)

Scarves for blindfolding

Outdoor environment

Bug collecting boxes & magnifying

Sketch books and pencils

Cameras

Clipboards

Glasses

Useful websites

[BBC Bitesize - The five senses](http://www.bbc.co.uk) from www.bbc.co.uk

[Information for adults on the human senses](http://www.todayifoundout.com) from www.todayifoundout.com

[BBC Bitesize videoclip: 3.36 mins](http://www.bbc.co.uk) from www.bbc.co.uk

Working Scientifically objective	How we can work scientifically
<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Observe closely, using simple equipment.</p> <p>Identify and classify.</p> <p>Use their observations and ideas to suggest answers to questions.</p> <p>Gather and record data to help answer questions.</p>	<p>Understand that there are special places (habitats) where mini-beasts (invertebrates) live.</p> <p>Ask questions about what they find and compare information with each other.</p> <p>Talk about whether they have noticed any patterns of where living things grow or live.</p> <p>Make a visual record of their observations in drawings and photographs and annotate to show their understanding and learning in their folders the following lessons.</p>
<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Perform simple tests.</p> <p>Use their observations and ideas to suggest answers to questions.</p>	<p>Learn about the differences between birds, fish, amphibians, reptiles, mammals and invertebrates. Sort the animals into groups according to their features. Consider why some animals are kept as pets and others aren't. Then design your own imaginary pet! Design a good pet.</p> <p>Be able to talk about why they have chosen to include specific features for their imaginary pet.</p> <p>Be aware of the meaning of the scientific language: birds, fish, amphibians, reptiles, mammals and invertebrates</p>
<ul style="list-style-type: none"> Ask simple questions and recognise that they can be answered in different ways. Use their observations and ideas to suggest answers to questions. 	<p>Place different items (noisy, textured, smelly) in a feely bag and talk about how we know what those items are. What senses are we using? List the five senses together and go outside to explore the environment. Go outside to explore the school grounds using different senses. Blindfold each other to find out what it is like without the sense of sight.</p>

Everyday materials

- Distinguish between an object and the material from which it is made
- Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
- Describe the simple physical properties of a variety of everyday materials
- Compare and group together a variety of everyday materials on the basis of their simple physical properties

Equipment needed

A collection of objects made from different materials and with different textures

Hoops

Opaque bag

Sticky tape

Clay

Play dough

Lego

Art straws

Little twigs, hay or straw

iPads

Useful websites

[A sorting and using materials challenge game](#) from www.bbc.co.uk

Working Scientifically objective

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How we can work scientifically

Play 'I-Spy the Material' game in the classroom, before discussing why different materials have been used. Sort items according to their properties and consider what it would be like if the tables were made of jelly or the chairs were chocolate! Identify and name the materials found in the classroom, using the scientific words: wood, plastic, glass and metal.

Sort the objects according to their properties (what material is this made of? What is its useful property?). Play Material Snap in pairs, placing an object each on the table and seeing if their properties are the same. – photograph the children doing this to put in their folders.

Recreate the story of The Three Little Pigs using straw, twigs, bricks and other materials. Predict which material will be the most successful and why.

Video the story retellings with commentary and explanations.

Discuss why some pigs may not choose to use bricks (more expensive, heavier, harder work to build with, etc.) and suggest successful alternatives.

Provide children with different materials and ask them in groups to create their own house for the little pigs. Retell the story together as a class and mimic the wolf blowing down the houses. Get the children to predict after they have made their house how well it will withstand the wolf's blow and why their house is the best.

Seasonal changes

- Observe changes across the four seasons
- Observe and describe weather associated with the seasons and how day length varies.

Equipment needed

Sorting pictures for seasons

Map of school

Weather symbols and sheet (Server)

Note sheet for weather watching

Pencils

cameras

Collage materials

glue

Thermometer

Thermometer grids (on server)

Useful websites

[Vivaldi's Four Seasons with images. 42 min long](#) from www.YouTube.com

[2.5 mins of seasons changing in the country. Music, no speaking](#) from www.bbc.co.uk

[Rainfall noises](#) from www.YouTube.com

[Making weekly weather recordings](#) from www.bbc.co.uk

[Rain on a tin roof](#) from www.Youtube.com

Working Scientifically objective

How we can work scientifically

- Ask simple questions and recognise that they can be answered in different ways.
- Observe closely, using simple equipment.
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- Identify and classify.
- Use their observations and ideas to suggest answers to questions.
- Gather and record data to help answer questions.

Be a Weather person on a large map of the school and get the chn to stick the symbols on. Get chn to answer the sheet in their book or create a smaller scale map for them to recreate in their books.
Go outside and look at the weather. Observe the temperature and wind. Suggest how to dress a teddy or doll appropriately for the current weather conditions. – photograph the bear, stick it in their books and get them to write why they chose those clothes for that day.

- Ask simple questions and recognise that they can be answered in different ways.
- Observe closely, using simple equipment.

Go outside and observe the weather, drawing what you see and describing what you hear and feel. Then go back inside to create a seasons collage for the classroom.

- Perform simple tests.
- Identify and classify.
- Use their observations and ideas to suggest answers to questions.
- Gather and record data to help answer questions.

Take the temperature outside once a day, asking the children what they predict will happen to the temperature as the term goes on. Get them to create a class record of the temperatures. Stick these in their books at the end of the 6 weeks and get them to say why the numbers are getting higher or lower.
Record these observations in the classroom and discuss the changes.

- Identify and classify.
- Use their observations and ideas to suggest answers to questions.
- Gather and record data to help answer questions.

Show children pictures from the different seasons and get them to classify these into the four seasons in their books. Give children a greater depth question such as ‘How can you tell which season is summer?’