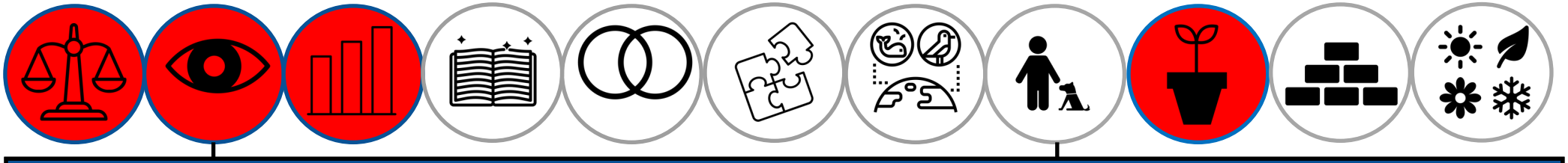
Year 2: Plants

SCIENCE CONTEXT: Biology



KEY VOCABULARY:

Seeds	Part of a flowering plant that is capable of developing into another such plant.
Bulbs	A round part of a stem that develops underground and contains the shoot of a new plant.
Water	A basic need of plants.
Light	Plants need sunlight to grow and stay healthy.
Temperature	Plants need to grow in a suitable temperature to grow and stay healthy.
Grow/growth	The process of increasing in size.
Healthy	In good physical condition.
Mature plant	A fully grown plant.
Shoot	The part of the plant that grows above the ground.
Soil	The upper layer of earth in which plants grow.
Germination	The development of a plant from a seed.
Food store	Inside a seed and/or bulb where they store food.

As Scientists we will...

Pupils should be taught to observe and describe how seeds and bulbs grow into mature plants.

Pupils should be taught how to find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Working Scientifically

Pupils should be taught to ask simple questions.

Pupils should be taught to observe closely, using simple equipment, and use their observations and ideas to suggests answers to questions.

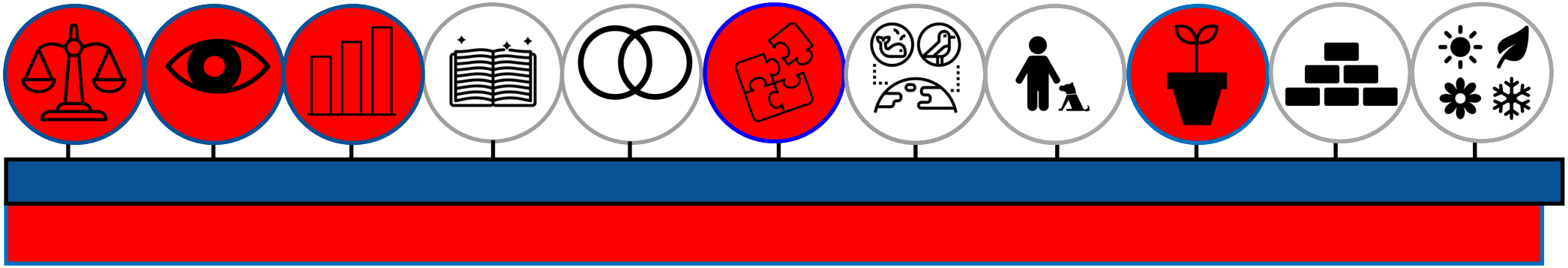
Pupils should be taught to gather and record data to help in answering questions.

Key Questions:

1) **How do seeds grow into plants?**
2) **How do bulbs grow into plants?**
3) **What do plants need to grow and stay healthy?**

Year 2: Plants

SCIENCE CONTEXT: Biology



What I need to know:

Pupils need to be able to describe how plants need water, light and a suitable temperature to grow and stay healthy.

Pupils need to be able to observe and describe how seeds and bulbs grow into mature plants.

Pupils also need to be able to ask simple questions about plant growth which then lead to enquiries where they perform simple tests using equipment, observational skills and record data (pupils should be encouraged to draw their own results tables to record data).

Opportunities for science capital:

Invite someone in whose job relies on knowledge of plants– such as a florist, gardener, or landscaper– to talk to the class about how they rely on their scientific knowledge of plant growth and needs to help them with their job.

Alternatively, a trip to a local nature reserve, or garden centre could be organised to observe plant growth in the local environment.

Assessment:

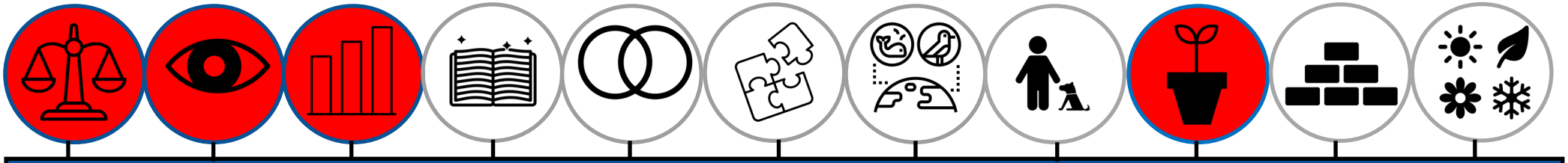
By the end of this area of study, children should be able to describe how seeds and bulbs grow into mature plants and know that although they need water to grow, most don't need light to start growing.

Pupils should be able to describe how plants need water, light and a suitable temperature to grow and stay healthy.

Pupils should be able to ask simple questions regarding plants (e.g. what if we gave a plant too much water?), observe closely using simple equipment, use their observations and ideas to suggests answers to questions and gather and record data to in different formats such as: results tables, diagrams, annotated photos.

Year 2: Plants

SCIENCE CONTEXT: Biology



Theme 1: What do plants need to stay healthy?

Starter

KWL grid– prompt with questions such as 'what do plants need to survive?'

Recap Y1 learning with key questions such as 'what are the parts of a plant?'

Main

Substantive knowledge:

Introduce plant needs with video activities from Tig Tag asking the review questions after each video: https://www.tigtagjunior.com/mindmap/#/lessons/CLASS00588/activities/main

Disciplinary knowledge:

Comparative test

Working scientifically objective: observe closely, using simple equipment.

Show children pre-grown plants, discuss what children think these plants need to keep healthy. Use the comparative test planning grid and raise questions they would like to investigate, e.g. *How long can plants last without water / light? Does it matter if the plant is inside or outside? How will less light affect the plant?*

Compare NORMAL CONDITIONS (on window sill + water + light + warm) with:

No/less/more WATER **or** No/less/more LIGHT **or** No/less/more WARMTH.

Discuss what they think will happen to plants without water/sun/warmth and how to record observations e.g. labelled drawings every few days to make plant diaries.

Children need to observe and measure the plants over time using simple equipment e.g. cameras, rulers, measuring tape, magnifiers.

Discuss what the class results show about what a plant needs to grow and to stay healthy.

See TAPS plan for full investigation: Plant growth

Plenary / assessment.

Odd one out:

Show children pictures of healthy and unhealthy plants. Ask them to identify which are unhealthy and explain why they might be like, what basic needs haven't been met?

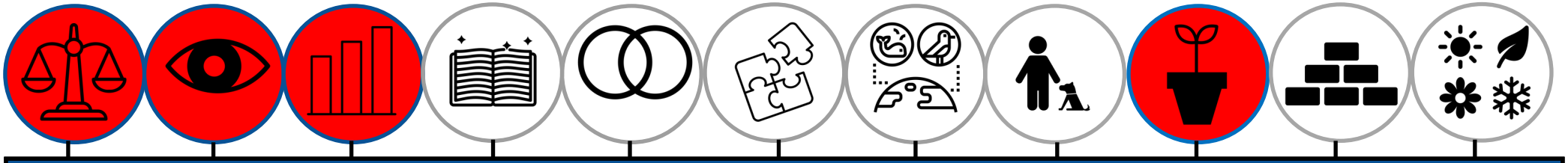
What if winter never ended? (explorify)

https://explorify.uk/en/activities/what-if/winter-never-ended

Use this as a launchpad for discussion about the conditions for growth.

Year 2: Plants

SCIENCE CONTEXT: Biology



Theme 2: Seeds and bulbs

Starter

Recap activity

Look at class plants from previous test and see how it is growing. Measure its growth and draw or photograph it.

Main

Disciplinary knowledge:

Working scientifically objective: observe closely, using simple equipment.

Provide children with a range of seeds, bulbs and magnifying glasses. Ask children to make careful observational drawings of seeds and bulbs. What do they notice? What's the same? What's different?

Now, cut the seeds and bulbs in half (adult, or pre-cut to save time). Again, ask children to make careful observational drawings of inside the seed and bulb. What do they notice? What's the same? What's different? They should see the new shoot and food store (could do a labelling activity here, but not essential). Draw attention to the food store and discuss how because of this food store, most seeds and bulbs do not need sunlight to grow.

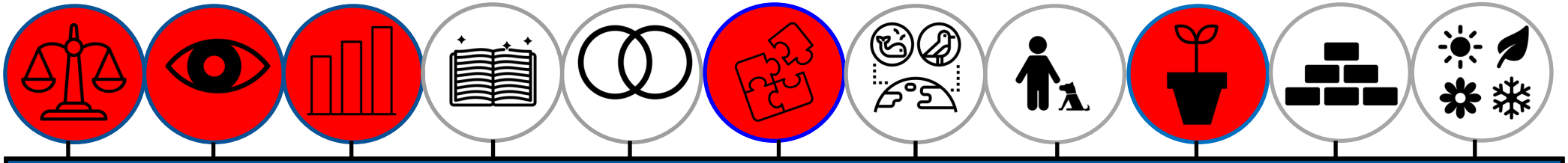
Plenary / assessment.

Odd one out:

Show images of a sunflower seed, sunflower seedlings and an amaryllis bulb and ask to think about which is the odd one out.

Year 2: Plants

SCIENCE CONTEXT: Biology



Theme 3: Observing seeds and bulbs grow

Starter

Recap activity

Main

Substantive knowledge:

Watch:

https://www.tigtagjunior.com/film/plant-life-cycle-TTJ00006/

https://www.youtube.com/watch?v=W2Yrj7LNTtY

For videos on seed and blub growth. What do they notice? What's the same? What's different?

Disciplinary knowledge:

Observation over time

Working scientifically objective: gather and record data

Set up a simple test where children plant a variety of seeds and bulbs to observe how they grow into mature plants. Put some of the plants into a dark cupboard so children can see that seeds and bulbs don't need light to start growing.

Children need to observe and measure the plants over time and record data (e.g. results table displaying growth, annotated photos, labelled diagrams).

Do this over several weeks, revisiting plants and data to keep an up—to-date record.

Finally, ask children to write a simple description of how seeds and bulbs grow into mature plants using their results to support their description.

Plenary / assessment.

Concept cartoon: