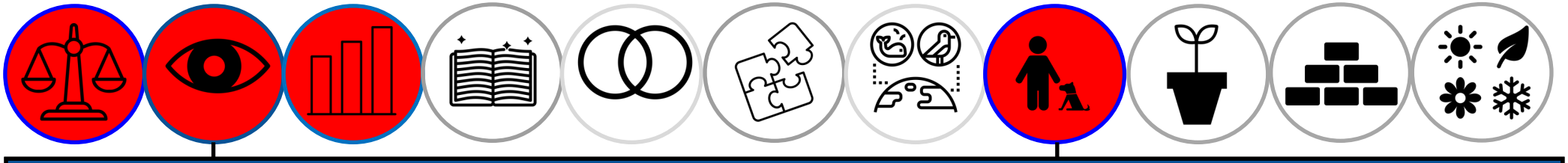
Year 2: Animals including humans

SCIENCE CONTEXT: Animals including humans



KEY VOCABULARY:

Offspring	Offspring are the young born of living organisms
Reproduction	Biological process by which organisms (the parent) creates new versions of itself (offspring)
Growth	*Growth is an increase in size*.
Young	offspring, especially of an animal before or soon after birth.
Old	having lived for a long time; no longer young.
Exercise	activity requiring physical effort, carried out to sustain or improve health and fitness.
Hygiene	Personal hygiene is the way we care for our bodies.
Germs	tiny organisms, or living things, that can cause disease.
Disease	A disease is a condition that impairs the proper function of the body or of one of its parts.
Food types	All food groups - *the right amount of carbohydrates, fruit and vegetables, protein, dairy (alternatives) and fat* -
Metamorphosis	A series of physical changes some animals go through to become adults.

As Scientists we will...

Pupils should be taught to:

- notice that animals, including humans, have offspring which grow into adults,
- find out about and describe the basic needs of animals, including humans, for survival (water, food and air),
- describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

Working Scientifically:

Pupils should be taught to:

- Use observations and ideas to suggest answers to questions.
- Gather and record data to help in answering questions.

Key Questions:

1) **What happens to offspring as they get older?**
2) **What do animals need to survive?**
3) **Why should humans exercise?**
4) **What foods are good for us and why?**
5) **How can we practise clean hygiene?**

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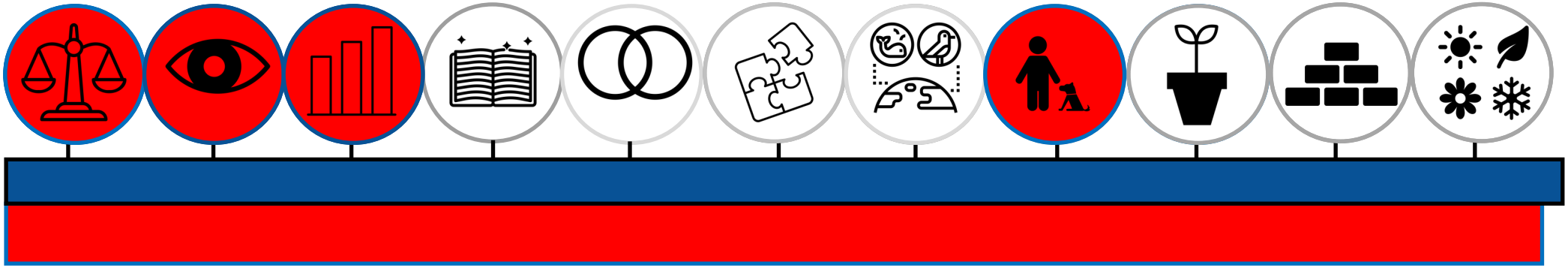

What I need to know:

Animals, including humans, have offspring which grow into adults. In humans and some animals, these offspring will be young, such as babies or kittens, that grow into adults. In other animals, such as chickens or insects, there may be eggs laid that hatch to young or other stages which then grow to adults. The young of some animals do not look like their parents e.g. tadpoles. All animals, including humans, have the basic needs of feeding, drinking and breathing that must be satisfied in order to survive. To grow into healthy adults, they also need the right amounts and types of food and exercise. Good hygiene is also important in preventing infections and illnesses.

Opportunities for science capital:

Invite someone in whose job relies on knowledge of animals including humans- such as a vet, or mid-wife- to talk to the class about how they rely on their scientific knowledge to help them with their job.

Part of science capital includes scientific media consumption- documentaries, reports etc. Here are links that provide daily science news for children. Checking in on these every now and then would be beneficial to help children see science in the wider world.

https://www.sciencenewsforstudents.org/

https://www.sciencejournalforkids.org/

Assessment:

By the end of this topic, pupils will be able to explain that animals, including humans, have offspring which grow into adults; describe the basic needs of animals, including humans, for survival; describe the important of staying healthy and how to stay healthy.

When working scientifically, pupils will be able to use observations and ideas to suggest answers to questions and gather and record data to help in answering questions.

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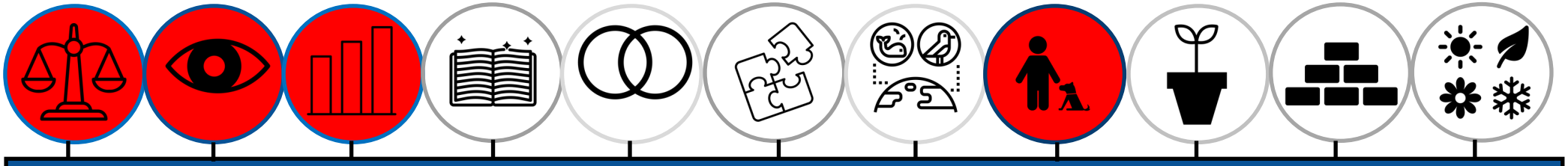

Theme 1: Offspring and Growth

Starter

KWL grid– complete prior knowledge, what we know looking at key questions and what we want to know.

Substantive knowledge:

Introduce children to the processes of reproduction and growth in animals. The focus at this stage should be on questions that help pupils to recognise growth; they should not be expected to understand how reproduction occurs.

Play a quick matching game of young and adult, page 2: https://www.stem.org.uk/system/files/elibrary-resources/2017/08/ks1_science_yr_2_autumn_1_healthy_animals_session_2_resource_1_0.pdf

Main

Substantive knowledge:

Play videos from https://www.bbc.co.uk/bitesize/topics/z6882hv/articles/zd4dkty to help pupils notice that all animals, including humans, have offspring which grow into adults. Generate discussion by asking: What do you notice about the babies and adults? What are the differences and similarities? Does anything surprise you? Why do some babies look different to their parents? (Some change environment as they grow, like tadpoles or ladybird babies.) What is it like for humans? How are we similar to our parents? Explain that humans are animals and we produce babies, as do animals.

Plenary / assessment

Complete life cycles demonstrating knowledge of offspring and growth: file://rdc2166/staff$/sarah.brogden/Downloads/Life_Cycles.pdf

HA could create own life cycles from scratch.

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Theme 2: Recognising growth

Starter

Recap: draw it! Draw a quick diagram of the life cycle of a human and/or chicken.

Main

Disciplinary knowledge

Pattern seeking

Working scientifically objective: Using observations and ideas to suggest answers to questions.

Today we are an anatomists.

Ask the children to compare the size of their hand with that of another child. As a class create a list of questions e.g. Do older children have bigger hands? Do taller children have bigger hands? Can bigger hands pick up more cubes? *('Handspan grab' can create a graph of cubes).*

Discuss how hand spans could be measured and agree as a class (e.g. draw around hands, spread/closed fingers, start and end place of measurement, to nearest centimetre). With a partner to help, ask each child to measure their own hand.

Record results together as a class.

See full TAPS plan: handspans

Plenary / assessment

Ask the children to compare hand spans and suggest reasons answers to the class questions.

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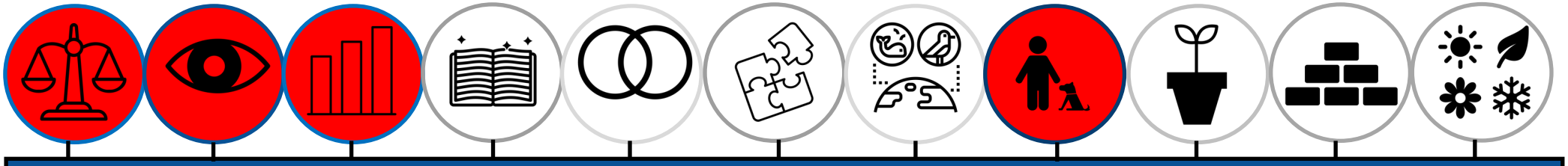

Theme 3: Basic needs and survival

Starter

'What if' discussion starter:

https://explorify.uk/en/activities/what-if/animals-did-not-have-young

Substantive knowledge:

Work through the videos and activity 1 quiz: https://www.bbc.co.uk/bitesize/topics/z6882hv/articles/z343f82

Display key vocabulary for basic needs and survival on the board: air, water, food and shelter.

Main

Make a desert island large enough to accommodate the whole class in the centre of the room. Scatter empty plastic bottles in the sea by the edge of the island or keep in a bag on the island. Explain that they are now stranded on a desert island. Ask them: *This desert island has nothing on it from your home. It has sun, sea, sand and a bit of shelter, but nothing else. What would you really miss from home if you were stuck on this island for a long time?* Then ask them to consider: *What one thing would make you happy? Is it the same as the thing you would miss the most?* Again, ask them to share their ideas, this time with their partner and then with the class. Say: *Now what if I told you that the boat that might pass by is a small local boat and can't carry lots of things. It can only carry the things we definitely need to survive. Shall we make a list together, in case the boat comes by?* Scribe for the chn, encouraging them to consider the basics of survival (clean water, basic food, something to keep them warm and a means of keeping clean). Pick up on any of their suggestions that are non-essential and talk about what makes them so. Write some suggestions down, knowing that they may have been included in a different way on the list already. At the end of the list, review the items together as a class and cross out any that they think are the same or too similar. Read the list together and ask if anything is surprising (the list is very short).

Plenary / assessment

Ask the class: *So what do humans need to survive? Why do we need food and water?* (Nutrients and to keep hydrated so that our bodies keep working properly.) *If we had our pets on the island with us, how would the list change? What do our pets need to survive?*

Tell the chn that it is unlikely a boat will come by and that sometimes people have been rescued by writing notes in bottles and throwing them in the sea. Ask the chn to reach out and grab a bottle that is 'floating' in the water's edge. Give them paper and pencils and tell them to write down the things they need the most for basic survival. They should share their list with each other then roll it up and push it in the bottle.

HA could write a more thorough list explaining why they need these things.

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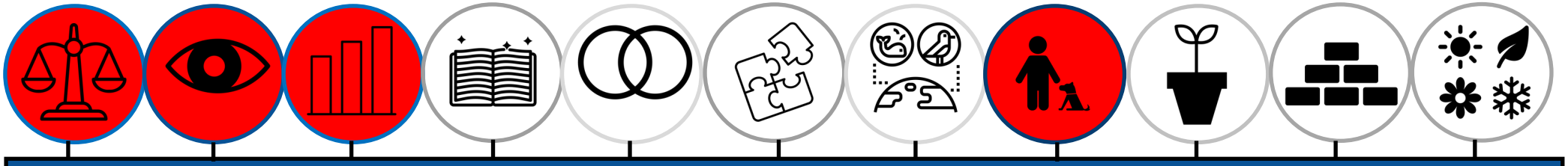

Theme 4: Staying healthy

Starter

https://explorify.uk/en/activities/have-you-ever/cared-for-a-baby-animal

See website for question prompts.

Substantive knowledge

Work through activities 1 and 2 https://www.bbc.co.uk/bitesize/topics/z6882hv/articles/z9j4g7h

Main

Disciplinary knowledge

Comparative/ fair test

Working scientifically objective: gathering and recording data to help in answering questions

Using the Year 2 comparative/fair test planning sheet, ask the class what would happen if we washed our hands with cold water; cold water and soap; warm water; warm water and soap– write these in the first box. Ask children how we could answer these questions and record ideas in the second box e.g. we could get our hands dirty and wash them to see which is cleanest. As a class, choose a question e.g. If we wash our hands in different ways, what will happen to how clean they are? Using a glue/glitter mixture, 4 pupils cover their hands, tell the class you're going to wash them using the different temperatures and using/not using soap. Ask, how can we make this a fair test? Record their ideas e.g. they need to wash their hands for the same amount of time, everyone's hands need to have the same amount of glue mixture on at the start etc. Make a class prediction about whose hands will be the cleanest, will it be the hands washed with cold water, cold water & soap, warm water, or warm water & soap?

Photograph the hands before. Allow children to observe the dirty hands using magnifying glasses, then run the activity. Allow children to observe the hands after washing, whose are the cleanest? Photograph again and give children a copy to then record their results by ranking hands from cleanest to dirtiest using

Plenary / assessment

Summarise the key points: how we stay healthy and why we need to stay healthy (balanced diet, exercise, plenty of water, good hygiene). Children could design posters in pairs with their top tips on how to stay healthy e.g what a balanced plate looks like, examples of exercises, how to wash hands effectively, how much water to drink daily.

Complete KWL grid