Association for the Study
of Animal Behaviour

Foraging and Feeding

A series of activities and games for primary school pupils

Written for ASAB by Naomi Latham

Foraging

KS1 & KS2

Foraging is a key component of the behavioural repertoire of many animals, often occupying a significant portion of their active time. Understanding foraging behaviour not only informs us about the behaviour of animals in natural environments but also allows us to understand and improve the welfare of animals living in captivity.

It is this latter point which is more relevant to pupil's education, since their main experience of animal behaviour is likely to come from interactions with zoo, farm or companion animals. The aim of this document is to provide a wide range of cross-curricular resources based on foraging behaviour in farmed pigs.

Five activities	
Foraging and finding Food	Lucky dip activity
Sensory	Cups activity
Investigating foraging	Finding food around the classroom
Adaptation	Foraging with different tools
Treasure Hunt	Find food under cups on tray

Acknowledgements

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Food for Thought

Background information for teachers

Domestic (agricultural) pigs are descended from wild boar and are thought to have been domesticated for approximately 9000 years.

Pigs have an excellent sense of smell which they use to find food. Under natural conditions, wild boar are omnivorous, foraging for leaves, grass, roots, fruits, nuts and flowers. They will also eat small invertebrates. Foraging behaviours can occupy approximately 85% of their active time.

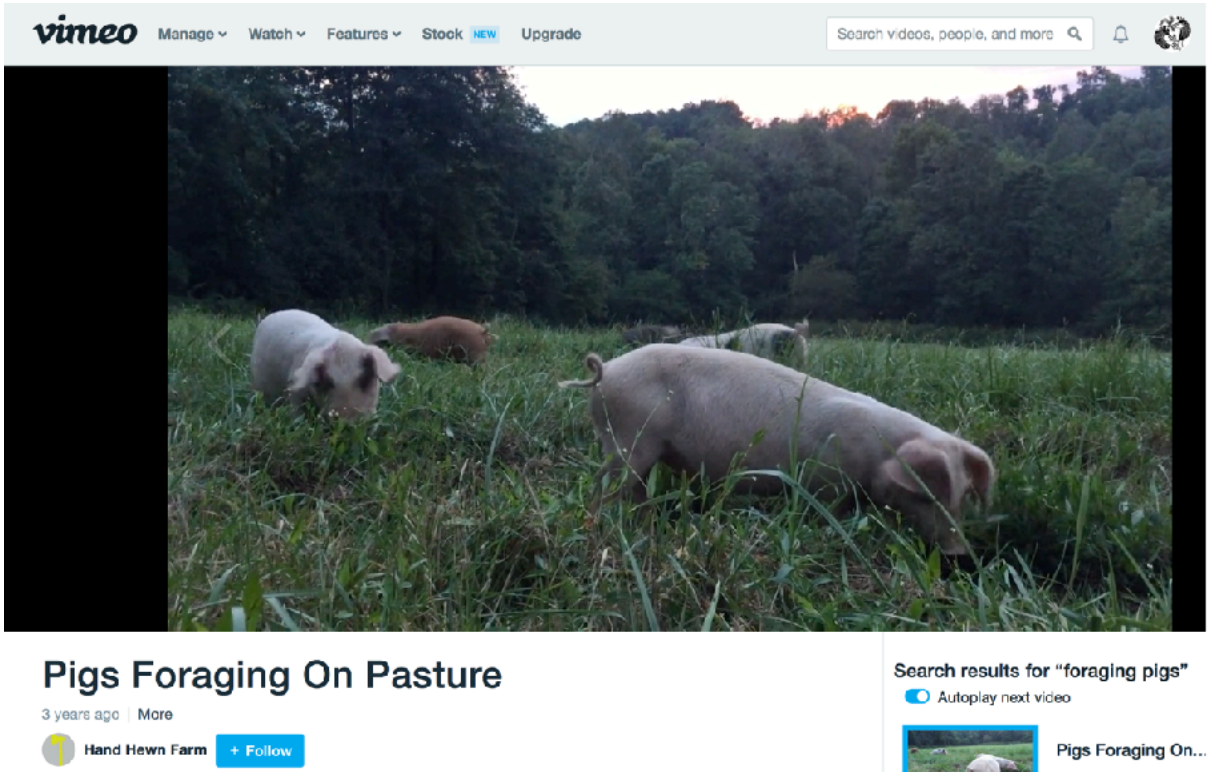
These behaviours comprise rooting (dig with their snouts), grazing (feeding on grass) and nosing food objects. This behaviour is so deep-rooted (forgive the pun!) that domestic pigs continue to spend up to three quarters of their active time foraging and feeding, even when fully fed each day. Failure to provide opportunities for these behaviours in captivity leads to a range of abnormal behaviours: these include aggression, tail biting, belly-nosing and highly repetitive behaviours, such as bar biting (known as stereotypic behaviours). Such behaviours are problematic due to their adverse effects on the welfare of the animals and reduced productivity for farmers.

The attached series of lesson plans are designed to enable pupils (primarily KS1, but with the potential for adaptation for KS2 year groups) to investigate the behavioural and emotional aspects of searching for and finding food.

Foraging and Finding Food

In this lesson the children will think about and investigate the behaviour of finding food. They will be introduced to the term 'foraging' and how pigs must spend a considerable amount of their day searching for food. How quickly can they find food items when they must search for them? Is everything edible? Does it affect the time spent foraging if pigs must identify food versus non-food items?

This video of pigs looking for food can be found here… https://vimeo.com/145265146



FORAGING AND FINDING FOOD

Learning Objective	Success Criteria
I know that foraging means finding food	I know that animals must find food I know that some things are eaten and others are not I can identify food vs. non-food items

Resources / Preparation	
Boxes Shredded paper Objects that can be used to represent food items	Timers Video of pigs foraging Plate, food and non-food items (or pictures of these items) Plate of single type of fruit (e.g. melon) and plate with a variety of fruits.

Teaching Input

- *Where do we get our food from?* Invite children to share their ideas.
- Introduce the idea that animals must also find their food and they can't just go to a shop.
- Play video footage of pigs foraging for food. Invite children to share their suggestions about what they observe.
- *Are the pigs eating everything? Are they leaving some items? Why?* Invite children to share their thoughts and ideas. Discuss how not everything is edible so foraging is not just about finding food, it is about determining what is food and what isn't food.

Independent Activity

Bronze	Silver	Gold
Provide each group of children with a box containing shredded paper in which objects representing food items have been hidden (the *foraging box*). Each child must find all of the food items as quickly as possible.	Provide each group of children with a box containing shredded paper in which objects representing food / non-food items have been hidden (the *foraging box*). Each child must find all of the food items as quickly as possible whilst discarding the non-food items.	Provide each group of children with a box containing shredded paper in which objects representing food / non-food items have been hidden (the *foraging box*). Each child must find all of the food items as quickly as possible whilst discarding the non-food items. Non-food items can be made very similar to food items (e.g. differing only in colour).

Longer Plenary

- Show a plate containing food items that require no preparation prior to eating (e.g. an apple) and those that require a little preparation to eat (e.g. fruits that must be peeled, oranges, bananas etc...) and those that require lots of preparation time (e.g. vegetables that must be cooked, such as potatoes, butternut squash).
- Invite children to share their ideas about what we would leave and why (e.g. the plate is not edible and orange peel tastes unpleasant). Invite children to share ideas about which food they would choose depending on if they were only slightly hungry or if there were extremely hungry. Would they always choose the food that they can eat immediately, or would they sometimes choose food that take longer to prepare in order to have a more varied diet?
- Have the plates of fruits available for the children. As a class vote on whether they would like to eat the plate of single fruit immediately or wait 5 minutes and have the fruit on the plate with a wide variety of items. Allow the children to eat the fruit on the plate chosen in the vote. Encourage children (particularly more able children) to discuss their choices.

Assessment Questions

- Do children know that the term *foraging* refers to the process of finding food?
- Can children identify items that can / cannot be eaten?
- Can children explain the difference between items that are cannot be eaten (*inedible*) and those that are not eaten because they taste unpleasant (*unpalatable*)?

Additional activities that can be used to support or extend learning	
• Provide children with a variety of (pictures of) food / non-food items. In pairs/groups children sort the items into those that can or cannot be eaten. • Provide children with a variety of (pictures of) food items. In pairs/groups into those that can be eaten directly (e.g. apples), those that require a little preparation (e.g. oranges and those that require significant preparation, including cooking (e.g. eggs)	
Cross-Curricular Links	
Data handling	Sort food vs. non-food items into a table Children time duration to find food items and plot on a chart

FORAGING GAME

PLAYERS

1 player per 'food box' at a time

1 'timer'

AIM OF THE GAME

You are a hungry pig. You need to find all of the food in the box as quickly as you can so that other pigs do not come along and eat the food first.

Silver and Gold challenges: If non-food items are included in the box these must be 'discarded' (placed in a different pile to the food items). If non-food items are 'eaten' (placed in the food pile) they make the player ill and incur a time penalty (e.g. 5 seconds).

HOW TO PLAY

The food items must be mixed thoroughly into the shredded paper in the food box.

The person with the timer indicates when the player may start finding food.

The 'pig' must find all of the food items in the box as quickly as possible.

The person with the timer stops the timer when the 'pig' has found all of the food items.

The 'pig' records their time taken to find the food and returns the food items to the food box (ensuring that they are mixed thoroughly into the shredded paper).

Each person in the group takes it in turns to be the 'pig' and find the food items.

WINNING THE GAME

The 'pig' with the quickest time is the winner.

ADAPTING THE GAME

This game can be played with the differentiation as described.

The game may also be played as a carousel with players taking all three challenges. As before, the 'pig' with the quickest time wins, but here the children can also discuss what happens to the time taken to forage for food when the difficulty in finding food items increases.

Investigating Foraging

In this lesson the children will learn about finding a range of food items (this offers potential links with healthy eating programmes). How quickly can they acquire the required food items? Does it make a difference if they work individually or as a group? They will also work scientifically in order to investigate the time it takes to find food items. Can the children accurately measure and record the time taken to find food? How does foraging time change as the foraging area increases?

At the end of the lesson, children should be encouraged to think about how the inability to perform naturally-motivated behaviours in captive conditions might affect the welfare (the emotional well-being) of pigs. It may not be appropriate to share details about welfare problems seen in captive pigs with very young children, but ideas of boredom and frustration (and some of the behaviours that these can lead to in children) may be usefully discussed.

INVESTIGATING FORAGING

Learning Objective	Success Criteria
I can investigate the duration of foraging	I understand that foraging is a time-consuming behaviour I can carry out a simple investigation I can write up (parts of) a simple investigation I can suggest additional questions for investigation

Resources / Preparation	
Jellybeans (one colour separated) Bowls (three per group) Straws (one per child)	Food Hunt Game bingo cards Food Hunt Game food cards

Teaching Input

- Talk through the steps that need to occur in order to eat a meal – work backwards (the food is eaten; the food is prepared; the food is bought/grown).
- *How long does it take to go out and get your food? How much time does your parent/adult spend shopping /cooking each day/week?* Invite children to share their ideas.
- Explain how animals must spend a lot of time going out and collecting their food ('foraging'). Show video clip of pigs foraging – explain how animals in the wild must go out and search for their own food, and this can take up a lot of their time.
- Play the Food Hunt Game as a class:
    - Printed food items are hidden around the classroom (or around the school)
    - Children are given a bingo card and must find the items to fill their card
    - Play individually or in groups to illustrate solitary vs. group foraging
- Explain that we are now going to carry out an investigation into the time it takes us to find food and bring it back to a safe place to eat.
- Children to carry out the following investigation then write it up.
  Decide which element(s) of the experiment are the focus for the writing task (use the correct terminology during the discussion even if using more child-friendly terminology in the written work):
    - *Hypothesis* and *Prediction*: ensure that children ask the relevant question for the investigation that they are undertaking and make a clear prediction about the outcome
    - *Equipment:* make a list of all of the equipment that is required
    - *Methods:* write the methods as a list of present tense commands (starting with imperative (bossy) verbs)
    - *Results:* record the results in a table or chart
    - *Conclusion:* answer the question asked in the hypothesis
    - *Next steps:* encourage children (especially able children) to think about what question they could ask following on from this investigation.

Independent Activity

Bronze	Silver	Gold
Children work in small groups. Each child transfers jelly beans from one bowl to another (a set distance away) using a straw. Another child times how long it takes them and records this time.	Children work in small groups. Each child transfers jelly beans from one bowl to another (a set distance away) using a straw. The foraging bowl contains two colours of jelly beans – one is the food colour, the other must be ignored. Another child times how long it takes them and records this time.	Children work in small groups. Each child transfers jelly beans from one bowl to another (a set distance away) using a straw. The foraging bowl contains three colours of jelly beans– one is the food colour, the other two colours (one of which is similar to the food colour) must be ignored. Another child times how long it takes them and records this time.

Working Scientifically	**Writing Scientifically**	**Writing Scientifically**
Adult works with children as a group encouraging them to give a verbal account of the investigation. Children to give verbal instructions for performing the experiment. Adult to follow instructions explicitly to show how methods must be given clearly and concisely to avoid confusion.	Children to work as a group to write up the investigation. Provide scaffolding (e.g. key words) as appropriate to the ability of the children.	Children to work in pairs to write up the investigation. Provide scaffolding (e.g. key words) as appropriate to the ability of the children.

Plenary
What other questions could we ask about the time it takes to forage for food? Invite children to share their ideas about new hypotheses that they could test.

Assessment Questions
• What is foraging (as opposed to eating)? • Why does foraging take time? • What factors increase the length of time that animals spend foraging?

Working Scientifically (KS1)	**Working Scientifically (KS2)**
Carrying out a simple test Using observations and ideas to suggest answers to questions Gathering and recording data to help in answering questions	Making systematic and careful observations Gathering and recording data in order to answer a question Using straightforward scientific evidence to answer a question

Cross-Curricular Links	
Maths	Plotting data onto charts
Literacy	Writing the Methods as an Instruction text
PSHE	Teamwork, cooperation and communication

FORAGING BINGO

PLAYERS

Individual foraging: Each child has a bingo card

Group foraging: Children work in groups of 4

AIM OF THE GAME

You are a hungry animal. You need to find different food items so that you have a balanced diet and remain healthy. You must find the food items on your card as quickly as possible.

Additional challenge: Create competition for food by limiting the number of food cards so that there are not enough cards for each child/group to complete their bingo card.

HOW TO PLAY

Food items are spread randomly around the search area.

You have a card with the food items that you must find.

Search around the room to find your food items – you may only find one at a time and must then return to place it on your card before going to find the next item.

WINNING THE GAME

The animal (group of animals) who finds all of their food items first is the winner.

FORAGING INVESTIGATION

PLAYERS

Children work in groups of 4

AIM OF THE GAME

You are a hungry animal. You must transfer the food from the foraging site back to the nest as quickly as possible.

HOW TO PLAY

The food items are in one bowl and the nest bowl is a set distance away (e.g. at the other end of the table).

You must use the straw to transfer the food from the foraging bowl to the nest bowl.

Record the time taken to transfer the food.

Each person in the group takes it in turns to be the animal and transfer the food items from the foraging bowl to the nest bowl.

Silver and Gold challenges: You must transfer only the food colour jelly beans to the nest bowl. Any non-food colour jelly beans must be left in the 'foraging' bowl (or transferred back if they have been transferred by mistake).

FINISHING THE GAME

Your turn ends when you have transferred all of the food coloured jelly beans from the foraging bowl to the nest bowl. Record the time taken to achieve this.

ADAPTING THE GAME

This game can be played with the differentiation as described.

The game may also be played as a carousel with players taking all three challenges. As before, the children record their time taken to complete each challenge, but then discuss what happens to the time taken to forage for food when the difficulty in identifying food items increases.

Using Different Senses to Find Food

This lesson links well with the Adaptation Lesson and the two could be combined during a session. In this lesson, children will get an idea of the relative importance of different senses (in humans and other animals). At the start of the lesson the children will be encouraged to think about how we can confuse our senses, and how this may influence our opinion about whether or not we will like something. The children will then have the opportunity to predict and assess the sensitivity of their different senses. Which of our non-visual senses (excluding taste) do they think is the most sensitive? Was their prediction correct? At the end of the lesson the children will be encouraged to reflect on the importance of the sense of smell for both pigs and humans.

USING SENSES TO FIND FOOD	
Learning Objective	**Success Criteria**
I can test a prediction about using different senses	I know the five senses I can make a prediction about using different senses I can test a prediction I can state whether my prediction was correct or not
Resources / Preparation	
Green Eggs and Ham by Dr Seuss Squash or fruit juice (2 or 3 different flavours) Food colouring Plastic cups Smell containers – scented cotton wool balls Sound containers – rice, dried peas, dried macaroni Touch – different grades of sandpaper	**Preparation**: *Prior to the lesson prepare some jugs of squash/juice but add some food colouring so that the flavour of the squash/juice does not match its colour (e.g. lime cordial coloured red, or apple squash coloured orange).* *Create 3 cups with each of the items in it (e.g. you will end up with 3 cups of scent A, 3 cups of scent B and 3 cups of scent C). Choose which scent represents the 'food' and create a 'Sample' cup. Label the cups with numbers (making sure to note which ones contain A, B, and C) and cover the lid of the cup with tissue paper. Repeat for the sound and touch containers.*

Teaching Input

- Read *Green Eggs and Ham* by Dr Seuss.
- *Why didn't the grouch want to try the green eggs and ham? Would you eat green eggs and ham if Sam asked you?* Invite children to share their thoughts.
- Show children the different colours of squash. Invite the children to guess the flavours and then try them. Discuss children's reactions to the unexpected flavours.
- Explain how the taste was unexpected because we deliberately confused our senses: what we *saw* didn't match what we *tasted*.
- *What are our senses?* Invite children to share their ideas. (*Sight, hearing, taste, smell and touch*)
- Explain how humans use sight most, but that other animals use different senses, and this includes when they are finding food. Show a range of different images of well-known animals that use different senses to find food:
  - birds of prey – sight
  - bats – hearing
  - dogs – smell
  - Could also include some more unusual examples:
    - snakes – infrared
    - platypus – electromagnetic fields
- Play video footage of pigs foraging for food, e.g. https://vimeo.com/145265146 search Vimeo for 'pigs foraging on pasture'.
- *Which sense are the pigs using to find food?* Invite children to discuss their ideas.
- Today we are going to investigate how easy / difficult it is to find 'food' items using our different senses (smell, sound and touch).

Independent Activity

Prior to trying any of the sensory cups, children predict which sense they will find easiest to use to identify '*food*'.

Carousel activity:

- Place the Smell cups on one table, the Sound cups on another and the Touch cups on a third table.
- Each child tries the Sample cup so that they know which smell, sound or touch represents the food.
- Each child then tries each of the other cups on the table and notes which cups have the same smell, sound or touch as the Sample cup.
- Move to the next table to repeat with the next set of sensory cups.
- Once the children have tried all 3 sets of cups reveal which cups contained each type of smell, sound and touch. Children self-mark their answers.
- *Which sense was best for identifying the 'food'? Which was worst for identifying the 'food'? Was your prediction correct?* Invite children to share their findings and ideas.

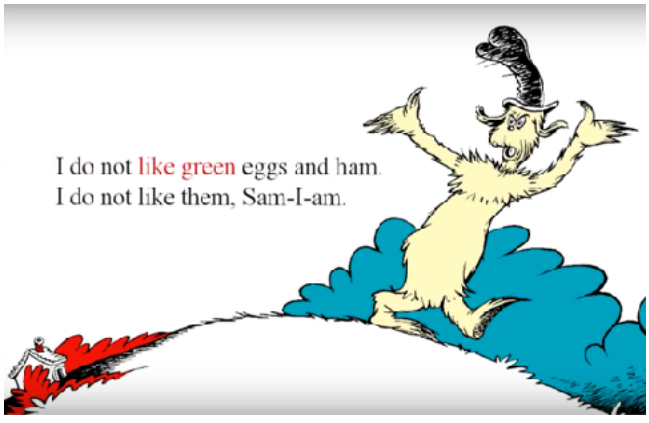
Bronze

This activity can be simplified by only having 2 examples of each smell, sound or touch.

Gold

This activity can be extended by increasing the similarity between the items in the containers.

https://www.youtube.com/watch?v=KmC1btSZP7U



Plenary	
Show images of different animals. Children to sort the animals based on which sense they use to find food.	
Assessment Questions	
• What are our senses? Can you name all five? • Which sense do we use the most? • Do you think it will be easiest to identify the 'food' using smell, touch or taste? • Was your prediction correct?	
Additional activities that can be used to support or extend learning	
• Taste-test foods, such as apple or onion, holding nose so that you cannot smell what you are eating. Discuss how limiting your sense of smell alters your sense of taste.	
Working Scientifically (KS1)	**Working Scientifically (KS2)**
Carrying out a simple test Using observations and ideas to suggest answers to questions Gathering and recording data to help in answering questions	Making systematic and careful observations Gathering and recording data in order to answer a question Using straightforward scientific evidence to answer a question
Cross-Curricular Links	
Literacy	Green Eggs and Ham by Dr Seuss
Literacy	Information texts about how animals use their senses to find food
ICT	Research information about how animals use their senses to find food

SENSES GAME

PLAYERS

Children play in groups

AIM OF THE GAME

You are a hungry animal. You need to find the food items but you have to use one sense to find the food.

HOW TO PLAY

At each station you will be told which sense you must use to find the food items (either smell, hearing or touch)

Try the 'Sample' food item using the correct sense.

Try each of the other items in the group and identify which one is food item (the same as the sample item) - the others are non-food items.

FINISHING THE GAME

Identify the food items and the non-food items in each of the activities in the carousel.

Describe the colour and taste of the drink:

It looks like…				
It tastes like…				

My five senses:

Which container has the 'food':

Smell		Sound		Touch	
A		A		A	
B		B		B	
C		C		C	

Which sense was the easiest to use to find the food? _____

Adaptation

In this lesson children will think about and investigate how adaptations enable animals to find food effectively. This lesson makes links with adaptations in pigs, but is a much broader lesson about adaptation in range of species. It would link in particularly well with discussions of Charles Darwin's observations of beak types in Galapagos finch species.

ADAPTATION

Learning Objective	**Success Criteria**
I can investigate adaptation	I know that animals are adapted to their natural environment I can make and test a prediction I can carry out a simple experiment

Resources / Preparation	
Images of animals with clear adaptations for their environment or diet (see below for suggestions)	Jelly beans Spoon Tweezers Straws Cocktail stick

Teaching Input

- Describe how animals are *adapted* to the environment in which they naturally live
- Show pictures of animals which show clear adaptations and discuss these, for example:
  - Desert dwelling animals: camels have plate-like feet to stop them sinking into the sand; long eyelashes to prevent sand blowing into their eyes
  - Polar animals: polar bears have thick fur for insulation; white fur to camouflage them as they hunt their prey
- Animals also show adaptations in how they forage and eat food.
- Teeth often indicate the diet of an animal – for example:
  - Carnivores: lions have more prominent canines (for ripping flesh)
  - Herbivores: elephants have more prominent molars (for grinding vegetation).
- Beaks in birds can also indicate dietary preferences - for example:
  - Nut or seed eating birds: sparrow have powerful beaks
  - Nectar-drinking birds: hummingbirds have long, slim beaks which they use like a straw
- *What adaptations can you think of for how animals find food?* Invite children to share their ideas and imagine themselves as different animals finding food in different ways.
- Play video footage of pigs foraging for food, e.g. VImeo pigs foraging.
- *What part of the body is it using for foraging and what sense is most important in finding food?* Invite children to share their observations and ideas [snout / olfaction (smell)]. Discuss how the end of the snout is fairly flexible and is used to root around in the undergrowth to unearth and dislodge items of food.
- In this session the children are going to investigate how different adaptations can affect the ability to forage when you have a particular diet – in this case, foraging for jelly beans. The 'adaptations' that we will investigate are:
  - Spoon
  - Tweezers
  - Straws (using suction)
  - Cocktail stick

Independent Activity

Bronze, Silver, Gold

- Children to predict the order of adaptations – from the easiest to the hardest to use to collect jellybeans.
- Children work in teams to collect jelly beans (one at a time) using their implement and take them back to their group.
- Children have one minute to collect as many jelly beans as they can in one minute. Repeat with each of the different implements
- Record the number of jelly beans collected with each type of implement.
- If time, repeat with different container types to investigate how the most effective implement may change according to the location of the food.

Plenary
Invite children to share their thoughts regarding the activity. *Was their prediction met? Which implement ('adaptation') was the best for collecting the food? What might be an appropriate food item for the other implements?* There are a number of animals that have these sorts of adaptations. Show pictures to illustrate how the adaptations that the children have been investigating can be found in animals. Spoon: Spoonbill – uses its spoon-shaped bill to search for food items in the mud in estuaries and lakes Tweezers: Pheasants – use tweezer-like beaks to pick insects and seeds off the ground Straw: Butterflies – use their proboscis to suck the nectar from flowers Cocktail stick: Aye-aye – uses its long middle finger to get insects from under tree bark
Assessment Questions
What is adaptation? Explain how animals are adapted to their environment.

Working Scientifically (KS1)	**Working Scientifically (KS2)**
Carrying out a simple test Using observations and ideas to suggest answers to questions Gathering and recording data to help in answering questions	Making systematic and careful observations Gathering and recording data in order to answer a question Using straightforward scientific evidence to answer a question

Cross-Curricular Links	
Maths	Data handling – recording results in a chart
Literacy	Speaking and listening – explaining what they have found in a clear, concise way
PSHE	What adaptations might we have to make if we had a disability?

ADAPTATION GAME

PLAYERS

Children play in groups of 4 or 5

AIM OF THE GAME

You are a hungry animal. You need to collect as much food as you can in one minute. However, you can only collect one item at a time (and take it to your nest) and you have a specific 'adaptation' for finding food and must collect food with that 'adaptation'.

Spoon: carry one food item at a time using the spoon

Straw: suck a food item onto the end of the straw

Tweezers: grip a food item between the tweezers

Cocktail stick: stab a food item onto the end of the cocktail stick

HOW TO PLAY

Before starting the game, have a look at the different implements ('adaptations') for collecting the food items. Which one will let you collect the most food items in one minute (you are only allowed to collect one item at a time)? Which one the least?

The food items start in a foraging bowl and a nest bowl is a set distance away (e.g. the other end of the table)

In your group, take it in turns to collect a food items (one at a time) from the foraging bowl and put it in the nest bowl

Record how many food items can be collected in one minute then return all of the food items to the foraging bowl

Repeat with each of the different implements ('adaptations') for collecting food.

FINISHING THE GAME

Record the number of jelly beans collected with each implement in one minute.

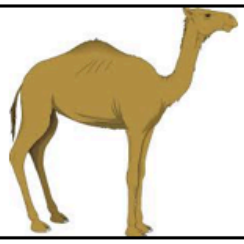
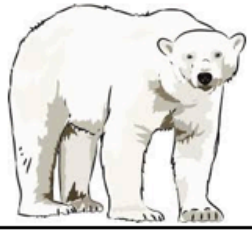
ADAPTING THE GAME

Depending on the time available, each child may try finding food with each implement; or members of each group each have a different implement and results are recorded as a group. Think about what made each of the implements better or worse at collecting the food items. How did their shape make it easier or more difficult to collect the food? What food types might be more appropriate for the other implements? If time, have a carousel of different container shapes. For example, which implement is best if the jelly beans are in… a bowl? a tube with a small hole in the side? a tall container with a small opening at the top?

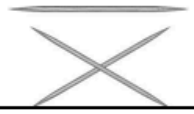
Adaptation is _____

_____

Explain how these animals are adapted to their environments:

Number of jelly beans collected in 1 minute:

Which adaptation made it easiest to collect the food, and why?

_____

_____

TREASURE HUNT GAME

PLAYERS

Children play in groups

AIM OF THE GAME

You are a hungry animal. You need to find the food items hidden in the foraging area.

HOW TO PLAY

Create food item cards with different points for each item. If using non-food item cards these should be marked as 0 points. Create at least 5 food items per player.

Set up the foraging area: place food items (and non-food items, if being used) underneath the cups. Randomly position the cups around the foraging area tray.

Players take it in turns to lift a cup and acquire the food item underneath.

When all of the cups have been 'foraged', each player adds up the points for their food items.

WINNING THE GAME

The player with the most points wins.

ADAPTING THE GAME

Increase the number of non-food items hidden beneath the cups.

Add in 'poisonous' food items that make the player 'ill' and require him/her to take points away from their score.

TREASURE HUNT

Learning Objective	**Success Criteria**
I understand how it feels to find food	I can describe feelings of pleasure and anticipation I can describe times when I feel anticipation and pleasure

Resources / Preparation	
Plastic cups Tray	Pictures of / objects representing food and non-food items Jelly beans

Teaching Input

- *Have you ever been on an Easter egg (treasure) hunt? How did it feel finding the eggs (treasure)?* Invite children to share their thoughts.
- Brainstorm other activities where there is a build-up of anticipation followed by a reward (e.g. birthdays) – *how did they make you feel?* Invite children to share their thoughts and ideas.
- Encourage children to think about times when they have had to wait for food – days out in the park / countryside; camping holidays; during the school day. *How does food taste when you know you have to wait for it?* Invite children to share their ideas.
- *How would you feel if you ate all of your food at breakfast time (and had no other meals during the day)? Would you rather do that or have meals spread throughout the day?* Invite children to share their thoughts.
- Have 5 jelly beans available per child. Half of the class (Group 1) can eat all of their jelly beans now; the others (Group 2) can only eat one jelly bean now. At regular intervals during the independent activity, allow Group 2 to eat another of their jelly beans.
- Create a mind map of 'Feelings before…' and 'Feelings after…' they have eaten food
- Explain how we are going to play a game to try to imagine how it feels being an animal that is looking for food.

Independent Activity

Children work in groups to create a treasure hunt activity using a tray and cups to hide objects/pictures representing food.

- Each food object scores the finder a given number of points.
- Players take it in turns to uncover and collect objects.
- The winner is the person who scores the most points.

Plenary

Discuss with the groups how it made them feel to either eat the jelly beans in one go or spread out over the lesson.
Why is it important to provide captive animals with opportunities to forage?
Can you think of any problems if we get it wrong? Invite children to share their ideas – for example, can we elicit negative emotions such as jealousy or frustration if we see others with things that we want? How did the children in Group 1 feel when they saw Group 2 still eating their sweets.

Assessment Questions

- How did it make you feel when you won/lost the game?

Additional activities that can be used to support or extend learning

- With the optional food in class, allow half of the children to eat the food at the start of the lesson and give it a score (out of 10). Then have half of the children eating the food at the end of the lesson and scoring it (out of 10). Do the children who had to wait for the food score it more highly than those who were allowed to eat it straight away?
- Non-food objects also hidden under cups – these score 0 points (or even require the player to subtract points)
- A time limit is added to the game
- Players must retrieve food objects from the treasure hunt and return them to a 'home' location

Working Scientifically (KS1)	Working Scientifically (KS2)
Carrying out a simple test Using observations and ideas to suggest answers to questions Gathering and recording data to help in answering questions	Making systematic and careful observations Gathering and recording data in order to answer a question Using straightforward scientific evidence to answer a question

Assemblies and links with other themes

ASSEMBLIES AND LINKS WITH OTHER THEMES
Healthy Living
• What is the purpose of food – why do we need to eat? • What foods do we need in order to stay healthy? (Recap the main food groups and how much we should eat of each: fruit and vegetables; carbohydrates; dairy; protein; fats) • Nutrients in a balanced diet • Where does our food come from and how does it get to us? • Exercise and its effect on the body
Food around the world
• Different diets around the world – core foods and proportion of different foods varies greatly around the world • Lack of food in developing countries – *how can we help?* Rising obesity in developed countries – *what can we do?* • How is climate change impacting on food production (both subsistence and commercial)? • Fairtrade for farmers around the world
Food production and the environment
• Air miles of foods • Impact of commercial food production on the environment • Impact of commercial food production on animal welfare – *how do you know if your food has been produced ethically?* • Food wastage – *what can we do to minimise this?*