

Spring Term

Year 2

Covering activity badges : **Scientist Badge**

Do six activities. You should choose at least one from each of these sections.

Section 1: reactions

- **Show how vinegar reacts with different items and explain what happens. The different items could be steel wool, sodium bicarbonate or old dirty coins.**
- Find out what happens when you add salt to water.
- Compare the density of water to the density of other liquids. Show how these liquids react to each other.
- **Make a pH indicator solution. Use it to test the acidity or alkalinity of other liquids.**
- Grow crystals.

Section 2: interacting with energy

- **Create a basic electrical circuit which includes a switch. Show how it could be used to control a lightbulb powered by a battery.**
- Make an air powered balloon rocket or a water rocket. Investigate ways of improving how far it can travel.
- **Make a simple compass. Show the effects of metallic and magnetic materials upon it.**
- Use marshmallows and spaghetti to build the strongest tower you can. Explain how you have improved your design.
- **Find a way to show that hot air rises.**

Section 3: living things

- Set up a wormery or ant colony. Record what happens over three or four weeks
- Investigate what happens to your pulse rate before, during and after exercise.
- **Grow cress, beans, peas or a similar plant. Investigate what happens when the plant has no access to light. What happens when it has light, but no water?**
- **Find a way to show that plants take water up through their stems.**
- Make some yoghurt and find out how living organisms are involved in the process.

Challenge Badge parts:

Take part in 2 problem solving activities and then discuss what you found difficult, and why.

Learn how to tie a variety of knots.

Activity to help you become healthy.

Need to keep long tin foil, cling film and grease proof paper boxes for this badge.

Week 1

Introduction to scientist badge, welcome back and games night.

GAME 1: Relay game, looking at moving up and down the hall in different ways each time. This could be played where each time, all the children go in the same way. Or a number and action could be called, such as number 1, walk; number 2, hop; number 3, jump; number 4, crab walk; etc.....

Explain the idea behind the scientist badge.

Explain that next week all the cubs will need to bring two empty 2 litre plastic bottle, such as a lemonade or coke bottle. It is important that they keep at least four 2 litre clear plastic bottles.

GAME 2: Kim's Game. Cubs to sit around the table, with a variety of different scientific items on top. Things could all link with the different evenings which will happen this term. sun glasses, compass, torch, a piece of string, a mirror, an apple, potato, a plastic animal, some vinegar, a foreign animal, an egg, an umbrella.

Once the game has been finished, go through the programme for the term, and see if the children can work out which item, links with each week.

PRAYER 29

Week 2

Start to keep a record of the weather over the next month, making the instruments needed to record it, such as wind measurer, and water gauge.

GAME : Start the children off in the centre of the room. Label one corner of the room with sun, one rain, one snow and the other wind. Children start to run around the room, one adult has their eyes closed, when the other shouts, what the weather man ! At which point all the children rush to one of the corners. The adult with their eyes closed then says something like "In Stevenage the weather is going to sunny" or "In Gloucester the weather is going to be snowy." The children who are in that corner are either out, and you work out the last one to survive, **or** the children in that corner gets one point recorded, and it is the one with the greatest number of points.

Using the different worksheets, see if you can make a range of devices for measuring the weather.

****** SAFETY WARNING ******

Each group will need at least one adult to help as there are some dangerous cutting instructions which need to be completed. If you feel your cubs will not be able to complete them safely, then it might be as well to make this a later week, and to prepare the cutting up at home beforehand.

Once the cubs have finished the different measuring devices, then give out the record sheets, and explain how to use them. The cubs can use either the temperatures from the media, or using a thermometer at home.

Barometer. This is quite easy, attach a balloon to the top of a 2 litre plastic bottle. Then fix around the edge with tape. If the balloon goes in it is high pressure, and if it comes out or blows up it is low pressure.

PRAYER 30

Week 3

Make a simple compass, also look at why objects are floating and sinking, using plasticine.

GAME : Start playing some kind of compass game, such as Captain's Coming, found on games resources. OR Just use the eight points of the compass, if a running around game. There are quite a few activities that can be carried out with a compass. Start off by putting some obstacles, such as chairs, in the middle of the room. Cubs start off in pairs, one side of the room, and have to guide their partner by saying 1 pace North, 2 paces West. A harder game can be to blindfold the walker.

Split the pack in thirds, and swap after about 45 minutes.

Group 1 - Compass.

Equipment : *Magnets, Needles, Bowl, corks*

Explain that early Italian compasses were made using a cork and a needle. The needle needs to be charged by using a magnet first. You need to stroke the needle with the same end of the magnet. It is important that you stroke the needle only one way, which does not matter, but it needs to be the same way all the time. After about 5 minutes of stroking the needle gently push the sharp end of the needle into the end of the cork. Then gently place into a bowl of water.

Group 2 - Floating and sinking.

Equipment : *Bowl, cork, apple, potato, banana, boiled egg, orange, coconut, hazelnut, etc..*

Have a variety of objects available which are not obvious whether they will float or sink. Some different fruits and vegetables are good ideas. Though some easier ones will also be needed to keep up the interest.

Group 3 - Making some plasticine float.

Equipment : *Bowls, plasticine, weights (coins), scales.*

Have a go at trying to make a variety of boat-ish type shapes to see how many coins a piece of plasticine can carry. Modelling dough or clay could be used, though are not quite as good. If the activity seems to be quite quickly, have a competition to see how little plasticine you can use to make a certain number of coins float. The idea of the activity is trying to get over the fact that some things which would sink if in a solid shape, can be made to float if they displace enough water, by enlarging the surface area for contact. Hence a block of steel would sink, but ships are made with steel. For older cubs, I would not suggest what to do, just give them the plasticine and 5 coins and ask them to make them float on the water for 2 minutes.

PRAYER 31

Week 4

Make a switch using household items.

GAME : One cub stands at the far end of the room, and the other cubs at the other end. The cub has a powerful force field around them, which works when switched on. The leader calls out 'on' and the cub by themselves can turn around, and try to spot any cub moving, if caught that cub needs to go back to the far end of the room. When the leader calls 'off' the cubs can move towards the cub who is by themselves. A much more enjoyable way for the cubs, is when the force field goes off, the way of moving is also defined. Such as hopping, jumping, crawling, etc....

This is a great plan to allow the cubs to experiment with a whole range of different materials. First of all set up a circuit with a bulb, wire and battery. Crocodile clips are useful if available but normal wire is just as good. Each six will need the circuit.

In the middle on the table put a variety of household objects, such as tin foil, paper clips, drawing pins, bottle tops, screws, film canisters, wool, string, tape, spoons, etc....

Each six try to find as many different ways as they can to make a switch, hopefully one they can turn on and off, with just a small movement.

With about quarter of hour left, start to talk to the cubs about recycling at home. Decide about some of the things that can be recycled, and how many of these they are actually recycling at home at the moment. Also look into the ways that the items that can be recycled are, is it a house collection service, going to a recycling bank, or does it get recycle within the home.

Remembering the best form of recycling is re-using.

PRAYER 32

Week 5

String telephones, and a simple periscope.

GAME : Story with Numbers. Sit all the cubs in a circle, giving the numbers out between 0 and 9, as these are the numbers found on the dial of a telephone, not using the numbers 2 or 4. Though you may need to use less numbers with smaller packs. Then start telling a story, when the children hear their number, they have to stand up, run around the circle, and sit back in their place. A story can be found in resource pack.

String telephones have always been really easy to make, and the cubs seem to have good fun playing with them. Though there can be some finding out completed, such as can you make it go around corners, how long can you get the message to travel over.

For those who have not made string telephones before, make a small hole in two plastic cups, and thread the ends of one piece of string through the hole from the bottom of the cup. One through, tie a large knot, at both ends of the string. It is now ready to use.

The periscope on the other hand is more technical, so see separate sheet, but you need mirrors, tin foil box, glue, and cardboard. You will need one 90mm by 65mm flat unbreakable, but cuttable mirror for each cub, cost roughly 30 pence each.

PRAYER 33

GAME : As the theme for the night is working together as a team, then a good six game is probably needed. Such as dividing the room up into four pieces, with a cross of chairs, or a line on the floor. Give each section a balloon. On the word go the sixes have to get rid of the balloon out of their area. When the whistle goes they have to stop, the areas where the balloons are gain a point. The one with the lowest number of points at the end of five rounds are the winners. I would suggest 2 or 3 minutes per a round would be long enough. Any team popping a balloon has three points added onto their score.

Every cub will need to bring in a container with a lid to cubs next week, to put beans in. The suggestion could be a glass jar according to how confident you are with your own cubs.

The cubs need to work in sixes to prepare a game and activity to last about 45 minutes based on healthy eating. The game should be somewhat linked to the activity, but can be based on a game already played. Below are a few ideas for each six to use, but they will only be need to be used if the six are totally stuck on coming up with their own ideas; as their own ideas will probably be a lot better. Though checks will need to be made to make sure that all the sixes are not planning exactly the same night. A lot of tonight will be used to prepare resources, though some cubs may have to take home some extra work to complete. All cubs though to bring back work next week. Therefore if one cub forgets or is away you still have choices for other groups. The only downside to this will be if cubs have perishables, then a decision will have to be made on the week they are to be.

One six could look at different ways of cooking food.

IDEAS This could be based on the different ways of cooking a particular food such as potatoes. Frying to get chips, baking, boiling, mashing, and microwaving. This may involve an eating session, if it possible to reheat the food, such as a blindfold eat, where the rest of cubs have to guess which method has been used to cook the food.

Game could be based around baked over chips. To see how healthy the room is, draw chips on one side of paper, and a jacket potato on the other side. Lay them around the room. One side is healthy, and one not, the healthy have to turn paper over to show jacket potato and the unhealthy group have to turn over to show the chips.

One six could look at a balanced diet.

IDEAS This could involve taking a plate and drawing or collaging on it a balanced diet.

Game could be looking at splitting foods into their different types. In a relay the cub has to run and get the type of food called out by the running six. This might be fibre, sugar, fat, etc.. The cub at the front of the line runs up to the pile spread out at the front of the hall, and chooses a picture which is most appropriate to what has been said.

One six could look at different fruits and vegetables.

IDEAS This could be a tasting session, with the cubs having to first draw a picture of the fruit or vegetable whole. Then taste the fruit and give it a mark out of ten to whether they would eat it again. The fruits would need to be decided by the running six.

Game could be a traffic light mix, if the running six call out a vegetable the cubs can run around, a fruit the cubs walk, and any other food the cubs stop. Though other variations can be used.

More on the next page.

One six could at the intake of fats, sugars and salts.

IDEAS This could be a look at first at the product in raw form, such as a pile of fat, sugar and salt. It then could be a discussion about why they are bad for you in large quantities, with each of the six having something to say, though could be acted out as a play by the running six. The next thing could be a look at some everyday labels for the salt, sugar and fat content, and maybe a speed test to lay them out into order of the worst product to the best.

Game could be a stuck in the mud variation, Mr Fat, one of the running six has to fill up the arteries of the other cubs by touching them on the shoulder. Once tagged the cub has to stop. The other cubs can free them by touching them on both shoulders, and run around them twice. More Mr Fats can be included if game is going to slowly.

PRAYER 34

Week 7 Growing bean shoots, keep a record every other day about the state of the beans.

GAME : As the night is about beanshoots, Beans, Beans could be played.

Explain to the cubs that you are going to plant mung beans. These are beans that produce beanshoots, which are very healthy to eat boiled or even better steamed. Give each child about a couple of dozen beans. Then either fill with water, or not. As they could just take ten beans home in an envelope and drop into jar of water when they get home.

Explain to the cubs how to use the sheet, and that they are to watch the beans until they grow fully, and are ready to eat. The cubs are then to fill in the first box, for day 1.

PRAYER 35

Week 8 Using a variety of exercises find out how the pulse changes. Can you make the pulse decrease ?

Second six, uses their own activity, and planning. (45 mins)

GAME : Use the cubs game time to complete a range of activities and record their pulses before, and then after. These activities might include lying down first, followed by walking on the spot, then jumping on the spot. Do each activity for two minutes and then take pulse. Ask the cubs to work out why their pulse is the highest after the jumping. Get the cubs to work in pairs so then the cubs can practise at taking someone else's pulse. Do not forget to remind cubs about taking pulses, that they should use two fingers, and not their thumb, as this has its pulse. If cubs have problems at remembering where their own pulses can be found on their wrist, then a small mark could be made to help cubs find their pulses quickly.

Use the second sixes activity about healthy eating.

PRAYER 36

Week 9 Growing cress, with one quarter, no light, no water, and the other half just cress

Third six, uses their own activity, and planning. (45 mins)

GAME : This is very similar to captains coming, but only with instructions which start with the letters in the word cress.

Crawl

Crouch

Clap

Run on spot

Row

Reach up

Eat

Earthquake

Energize (Jump up and say Energize)

Sit still

Stand Slanted

Shout silently

You will need some plastic / polystyrene plates (The ones which are flat with sharp edges are better), glue, card, kitchen towel and cress seeds.) The instructions on how to make are on a separate sheet.

PRAYER 37

Week 10 Look at different types of British animals, and look at where they live, and what they eat.

GAME : Split the pack into relay teams, on the word go, they have to run to the end of the hall and back. Though if you say an animal they have to act it out as follows.

Rabbit	Jumping
Worm	Slide on the floor.
Horse	Gallop
Dog	On all fours
Bird	Pretend to flap wings
Snail	Walk really slowly

Other animals can be introduced as necessary. Do not forget you can say more than one animal during any one go. Once the member has arrived back they tag the next person, who carries on the action.

This can be covered in a variety of ways.

- 1) To make a large collage using a piece of blue and green paper to make the grass and sky, and the children cut out bits from coloured paper, magazines to make trees, ponds, etc. Then draw, colour (paint) the animals and stick on the picture. This picture will need to show the animal eating, or maybe has a think bubble with what the animal wants to eat.
- 2) It could be a research activity, give each pair of cubs an animal which lives, and see if they can find out as much as they can about that animal, and make a small presentation to the pack
- 3) It could be a mixture, with some pictures already drawn, from www.enchantedlearning.com which has all the British animals, and information about each, so it could then be research and colouring in, before sticking on a slightly smaller, less messy backdrop or each child could make a six poster.
- 4) There is a last option of producing some food chains. Print out animals which exist in the food chain, cubs colour and then stick in order. If to scale then you could actually stick one on top of the other, as if they were inside the stomach.

Of course there may just be a mixture of all the above happening, according to the style the cub wishes to work.

If any time, you talk through with the cubs the results from the recycling sheet.

PRAYER 38

Week 11

Experiments in a bottle. Lava lamp, and volcano.

Fourth six, uses their own activity, and planning. (45 mins)

GAME : The volcano. The cubs stand in a circle, with one ball being held by a cub. One adult is facing away from the circle so they cannot see. On the first whistle the ball is passed around the circle, on the word 'rumble, rumble' the ball is passed quicker, and finally on the word 'bang', whoever has the ball has to take one step forward and turn around facing out of the circle, though still plays. It is the last one facing inwards wins.

Again using a 2 litre plastic bottle, cut off the top section, as for the rain gauge. Then put in some margarine, about 100 grams. Take some warm water and add carefully down the edge, being careful not to disturb the margarine. Leave for a couple of minutes. Blobs of margarine should start coming to the top of the water. If the water is too hot it may happen very quickly, so it may be worth practising before. It is also a much better activity if the cubs can make their own lava lamps, in their sixes, so it is more hands on.

Another 2 litre plastic bottle for this one, though the top section could be used from the other experiment is cut carefully. Before cubs fix the lid tightly to a plastic lid, and add some detail to make it look like a volcano. The sides can be built up with screw up newspaper and paper mache. To make the volcano work put some bicarbonate of soda in the upturned bottle, and a few drops of red food colouring, then add some vinegar. The more you add, the greater the reaction. According to time, the cubs within sixes could make their own, using PVA glue, screwed up newspaper and green paper, though you will need to leave time to dry. Apart from that a sheet is available for cubs to make one at home.

PRAYER 39

Week 12

Endangered animals around the world.

GAME : The cubs line up in relay form. On the word go they have to move up and down the room according to the action of the animal. Therefore :-

a cheetah would run,

a sloth would dolly step,

an orang-utang would bend over letting arms go loose,

a giraffe would walk on tip-toe with arms up stretched,

a king cobra would slither across the floor,

a golden eagle would flap,

a dolphin would swim

an elephant would swing the arm in front like a trunk

a flamingo would hop. etc..

For this evening I would suggest you ran it very similar to the different suggestions for the British animals. Though I would maybe a picture of the world as a backdrop, and the children could stick them on where they live.

Maybe it might be a case of making paper plate masks of the animals and the children discuss why they think they are being killed to the group behind the mask. Then go on to make an argument about what can be done to save their own species.

The whole aim of this evening is to get over the fact that many animals are on the endangered list, for a whole range of reasons, but most of them have a good connection to mankind.

Again www.enchantedlearning.com has excellent examples of all the worlds endangered creatures, and a piece about each one.

Another game which could be made during the evening is snap using endangered creatures.

Children draw pairs of endangered creatures on small same sized bits of card. One completed they can then play snap, whilst remembering about the animals which are lost.

Another set they could make is one with descriptions on one card about the animal, and a picture on another. Could be changed into a quiz, or a pairs game.

PRAYER 40

Week 13

Does air weigh anything ?

GAME : Balloon relay - on the first go they have to pat the balloon with their hands not letting it touch the floor. The second go they have to kick it, without touching the floor, and then the last go they have to hold it between their legs. It is the first team to do all 3 and sit down are the winners. If the balloon touches the ground at all during the game, that person has to go again.

This is quite a good activity to sit down and talk to the children about air before starting, as some quite interesting ideas might come.

What is air made from ?

What do we breathe ?

Where does that come from ?

What is most of the air around us ?

After a short discussion, then move onto the experiment.

Take a long pole, marking on exactly half. Tape a large balloon one end, and another large balloon blown up onto the other. When balanced exactly on the midpoint, it should be found the balloon which has been blown up is slightly heavier.

Another thing which can be discussed during this evening is how their cress has grown, and also their bean shoots have grown. Also as the end of the badge is this week, discuss with them what they have and have not enjoyed doing.

PRAYER 41

Week 14

Make Easter nests, using chocolate cornflakes and mini eggs.
Badge presentations.

GAME 1 : All the cubs sit in a circle, either on or off chairs, apart from two cubs who sit in the middle. They decide a thing that is in common with both of them. "They like watching Pokemon.", "They both have red t-shirts on.", "They both have watches on."

They then say to the group, "We in the centre both have, and everyone else which agrees with us, must swap places."

All the cubs which agree with the statement must stand and move, whilst the cubs in the middle try and take their place. Cubs cannot go back into their own place.

GAME 2: How many chicks in my nest ?

Cubs run around the room, and when the leader says stop, followed by a number the cubs have to kneel down in groups of that many and cheep, as if in a nest, waiting for the adult bird to come back with food. The first group to be ready chirping for their food are given a piece of wool, preferably brown, symbolising a worm. The one with the most worms at the end wins.

As it is a party night, hopefully the activity will not take that long. For those who are not taking part you could give them some resources from www.kidsdomain.com from the Easter section, such as wordsearches, crosswords, pictures to colour, spot the difference, etc... Whilst this is happening melt some chocolate in a saucepan, adding a little golden syrup. Take off the heat and pour into a bowl.

The cubs could then mix in some cornflakes, and put some into cake cases. Then add a small mini egg in the middle.

Finish off the night with badge presentation, plus some of the work that the cubs have completed during the term.

PRAYER 42