Week 1

Getting ready for KS3 Biology

Special features of birds

In your garden or neighbourhood, choose a bird to watch closely.

- Label the parts of the bird's body on the diagram opposite.
- Why do you think the bird needs wings?

- Why does it have claws?

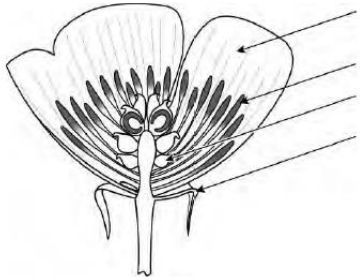
- Why does the bird have feathers?

Parts of a leaf

In your garden or neighbourhood, find a tree and collect a leaf. Use books or the internet to identify the tree from the leaf. In the space opposite, draw the leaf and label as many parts as you can.

Parts of a flower

Label the diagram of a buttercup flower which has been cut in half.



Keyword	Definition
Producers	Organisms (plants and algae)that make their own food.
Herbivores	Organisms (like animals) that have to eat other organisms to survive. Adapted to eats plants.
Carnivores	An animal that eats another animal.

Local wildlife

Think about the living things that you might find in your garden, or in a local park. List some organisms from your area, divide the list into producers, herbivores & carnivores.

Producers **Herbivores** **Carnivores**

Week 2

Getting ready for KS3 Chemistry

Birthday Chemistry

Every day, scientists do investigations and make observations to answer questions in chemistry. These scientists are called chemists. Chemists work out why materials have certain properties. They find out how materials change in chemical reactions. They create new materials, with perfect properties for particular purposes.

What to do

Go to this website:
https://edu.rsc.org/resources/collections/on-this-day-in-chemistry

Click on your birthday and fill in the form opposite to show others in your new school why your birthday is important in chemistry.

Hints

Fill in the form in your own words. If there is a word you don't understand, ask someone for help, or look it up in a dictionary or on the Internet.

You can draw a picture or find one on the Internet, print it out, and stick it on the form.

Why is my birthday important in chemistry?

Name:_____ Birthday ___/___/____

The name of my chemist is (or what happened on this day in chemistry):

_____

This is what my chemist did (or an interesting fact about the chemistry):

_____

_____

_____

Here is a picture of my chemist, (or a picture of what was discovered).

Week 3

Getting ready for KS3 Physics

We use physics in lots of areas of our lives. Use what you know about science to help you carry out the tasks below.

Circuits

Can you draw a simple circuit that you would find in a torch? Include these things:

battery bulb switch

The Sun

Check the Sun's position several times in one day and write the changes.
Warning: Never look directly at the Sun!

Time	Height in sky	Position
7 am		
Noon		
4 pm		
9 pm		

The Moon

Watch the moon every night for a week. Write down what it looks like each day. Think about its shape, and brightness.

Day	How the Moon looks
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	

Forces

Some types of force slow us down when we are moving. Fill in the blanks, using the words below:

water resistance air resistance drag

- A force that slows me down when I run is .....
- A force that slows me down when I swim is .....
- A force that slows me down when I cycle is .....

Magnets

List some objects that are magnetic and some that are not.

Magnetic Not magnetic

Week 4

Getting ready for KS3 Biology

Healthy eating

Find three different chocolate bars of your choice, or three different soft drinks of your choice.

Look for the nutritional on the wrappers or bottles. Fill in the table below with the nutritional information about the bars or drinks.

Name of chocolate bar or soft drink	Carbohydrates (per 100 g)	Fats (per 100 g)	Protein (per 100 g)	Calories

Which of the chocolate bars or drinks is the healthiest? Use your table to help you decide.

.....

.....

The human heart

Answer these questions using what you know about the human heart.

Where is the heart found in your body? .....

What does the heart do? .....

Your pulse measures how many times your heart beats in one minute. Your pulse goes up when you exercise.

- Record your pulse when you are resting, and fill in the table.
- Now jog on the spot or do star jumps for two minutes.
- Measure your pulse again and fill in the table.

Resting pulse (beats per minute)	Pulse after exercise (beats per minute)

What is the effect of exercise on your pulse rate? Use your table to help you decide.

.....

.....

Keyword	Definition
Resting pulse	Your **resting pulse** rate is the heart pumping the lowest amount of blood you need because you're not exercising. If you're sitting or lying and you're calm, relaxed .

Week 5

Getting ready for KS3 Chemistry

Activity 1: Materials matter

Chemists make materials that are suitable for their purpose. In this activity, you will work out why objects are made from certain materials.

What to do

- Find five objects at home that are made from different materials.
- Fill in the table to show why the objects are made from their materials. The first line is already filled in.

Object	Material the object is made from	Properties of the material that make it suitable for the object
frying pan	metal	• good conductor of heat • rigid

Activity 2: Sugar or salt?

In this activity you will plan and do an investigation to answer this question: **Can you dissolve more sugar, or more salt, in a glass of water?**

My plan

- Complete the table.

Variable	Will I change it or measure it or keep it the same?
substance (sugar or salt)	
amount that dissolves	
volume of water	
temperature of water	

- Write down what you will do.

_____

_____

My results

Substance	
Sugar	
Salt	

What I found out

_____

_____

Week 6

Getting ready for KS3 Physics

Spaghetti Towers

Engineers put pure scientific knowledge into practice – but their jobs often involve practical testing, problem-solving and teamwork too. This activity calls all of these skills into action, to help build a tall, strong tower using spaghetti and marshmallows.

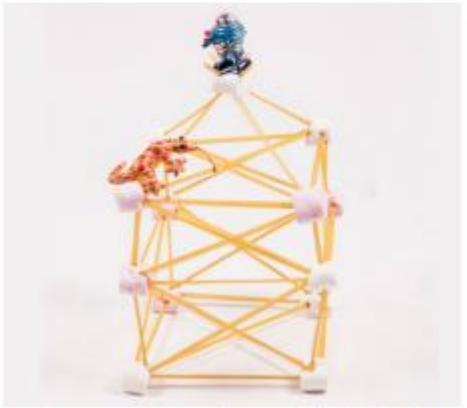
What's the Science

One piece of spaghetti is not very strong. But if you use lots of pieces you can build a strong, tall tower. Each piece takes a little of the weight – of the tower and of whatever you place on top. The weight is the result of **gravity**, which pulls everything vertically downwards. That's why it's important to ensure that the tower doesn't lean too much – and that's also why towers are normally thick at the base and thinner at the top.

Activity – Build the tallest, strongest, structure that you can!

1 Start building your structure by pushing a piece of spaghetti deep inside a marshmallow.

2 Keep adding spaghetti and marshmallows to build a structure however you want. But remember that triangle shapes are very strong.



3 Test your structure's strength by balancing objects on top of it.

4 Try making structures that have different shapes, and see which one is strongest.

You will need:
Uncooked spaghetti and marshmallows

Take a picture of your structure and stick it here