




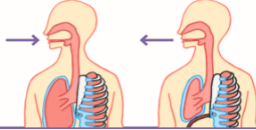



# KS3 Transitioning: Science

The Science department would like you to amaze us with your Science knowledge over the summer. Try to answer some of the questions that we have put together for you below, and have a look at some of the books we have recommended.

## Living and Non-Living Things

The way we can decide if something is alive or not alive is to look at the 7 characteristics of living things

<p style="text-align: center;"><b>Move</b></p> <p>Animals have different ways of moving. Plants turn towards the sun and some open and close their petals at different times of the day.</p> 	<p style="text-align: center;"><b>Reproduce</b></p> <p>Animals lay eggs or have live babies. Plants make seeds that can grow into new plants or grow new plants called plantlets.</p> 
<p style="text-align: center;"><b>Respond to Stimuli</b></p> <p>Animals can escape from danger or find shelter. Plants can repair themselves when they are damaged.</p> 	<p style="text-align: center;"><b>Take on Nutrients</b></p> <p>Animals eat and digest foods. Plants make their own food using the sun's light, carbon dioxide gas and water from the ground.</p> 
<p style="text-align: center;"><b>Excrete Waste</b></p> <p>Plants and animals both get rid of excess gas and water.</p> 	<p style="text-align: center;"><b>Respire</b></p> <p>Plants and animals use oxygen in the air which goes into their tissues and cells.</p> 
<p style="text-align: center;"><b>Grow</b></p> <p>Animals grow from babies into adults. Seeds and plantlets grow into plants.</p> 	

We remember these **Life Processes** like this:



- M**ovement
- R**espiration
- S**ensitivity
- G**rowth
- R**eproduction
- E**xcretion
- N**utrition

**List the 7 characteristics of living things:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

**Use the 7 characteristics of living things to decide if the following are living or non-living.**



Can a chicken move? \_\_\_\_\_

Can a chicken reproduce (does it lay eggs and have baby chickens)? \_\_\_\_\_

Can a chicken respond to stimuli (if it sees a fox will it run away and hide)? \_\_\_\_\_

Can a chicken take on nutrients (does it eat food)? \_\_\_\_\_

Does a chicken excrete waste (does it poop)? \_\_\_\_\_

Does a chicken respire (does it need oxygen)? \_\_\_\_\_

Does a chicken grow? \_\_\_\_\_

Is a chicken living or non-living? \_\_\_\_\_



Can a pencil move by itself? \_\_\_\_\_

Can a pencil reproduce (can it have baby pencils)? \_\_\_\_\_

Can a pencil respond to stimuli (can it run away if it's in danger or can it repair itself)? \_\_\_\_\_

Does a pencil take on nutrients (does it eat food)? \_\_\_\_\_

Does a pencil excrete waste (does it poop)? \_\_\_\_\_

Does a pencil respire (does it need oxygen)? \_\_\_\_\_

Is a pencil living or non-living? \_\_\_\_\_



Is a tree living or non-living? \_\_\_\_\_

Hint: It needs oxygen and it makes its own food.

When the leaves fall off that's how it gets rid of its waste



Is a key living or non-living? \_\_\_\_\_

Why do you think this? \_\_\_\_\_

How quickly can you complete this wordsearch on Life Processes?

## Life processes

N	O	I	T	I	R	T	U	N	Y	P	P	A	T	Z	X	E	A	B	S	A	N	Z	K
D	F	P	C	C	Z	D	X	K	B	O	H	H	Q	G	D	U	E	O	X	L	T	P	O
S	P	H	J	D	G	O	B	M	C	F	T	R	O	D	D	C	H	V	U	H	O	L	A
G	U	B	V	J	B	A	Z	N	G	S	S	C	P	D	D	V	R	D	L	I	F	B	U
Y	X	N	X	D	B	A	L	F	O	N	L	R	F	G	B	B	P	E	N	V	H	G	B
E	B	C	F	I	U	H	H	G	R	Z	H	U	A	R	S	G	C	O	S	R	N	T	K
E	L	I	E	L	X	Q	A	Y	P	G	L	L	U	G	X	E	I	E	W	I	I	O	C
L	H	S	Y	Z	O	G	W	N	Q	G	W	C	Q	O	L	Q	K	C	N	U	L	E	E
E	C	A	Q	A	L	W	R	K	E	L	J	G	G	Z	S	Z	Q	N	F	H	E	M	L
O	A	R	S	J	L	P	E	O	G	E	B	T	U	Z	Q	O	U	O	A	F	E	X	D
H	V	D	J	K	M	O	W	R	W	D	R	B	H	T	B	R	P	K	X	U	V	Z	C
H	L	D	U	H	O	O	I	N	J	T	E	X	C	R	E	T	I	O	N	A	M	G	G
W	J	H	D	A	O	Q	E	K	R	D	H	X	A	L	U	X	V	K	X	O	Y	W	Z
H	G	F	L	V	A	N	K	S	M	Z	B	F	K	U	U	B	Y	N	V	X	L	P	Z
P	C	B	E	L	K	H	X	Q	C	T	T	P	X	B	A	A	S	E	A	E	F	H	G
X	Y	O	Q	O	U	R	R	G	T	A	U	L	W	I	R	F	M	P	M	Q	W	K	P
Z	I	P	Q	D	P	U	T	H	P	G	N	I	V	I	L	E	Z	F	V	Q	U	S	Q
J	D	P	V	C	V	S	V	T	C	Z	R	O	E	U	N	O	H	C	T	F	X	O	A
L	G	V	R	X	Q	R	W	Z	H	G	T	Y	A	T	J	H	X	P	C	U	U	R	H
U	G	N	I	V	I	L	N	O	N	K	O	O	Y	V	F	M	V	Z	D	X	M	Z	Y
U	H	N	P	W	C	P	A	H	N	F	B	E	L	Y	N	R	B	Z	Z	Y	K	F	S
C	H	V	D	A	T	L	Z	C	R	E	P	R	O	D	U	C	T	I	O	N	Z	M	T
M	S	M	A	F	H	G	E	Z	N	O	I	T	A	R	I	P	S	E	R	R	Q	L	R
S	O	C	L	Q	X	E	Q	L	Q	S	A	O	Y	T	I	V	I	T	I	S	N	E	S

babies  
living  
nutrition  
running

excretion  
movement  
reproduction  
sensitivity

growth  
nonliving  
respiration  
sunflower



**Match the equipment to its correct name**

spatula  
 round bottomed flask  
 stop watch  
 pipette  
 magnifying glass

petri dish  
 pestle and mortar  
 microscope  
 measuring cylinder  
 thermometer

test tube rack  
 funnel  
 gauze  
 evaporating dish  
 conical flask

burette  
 tripod  
 bunsen burner  
 balance  
 tongs

goggles  
tubes

glass beaker

clamp stands

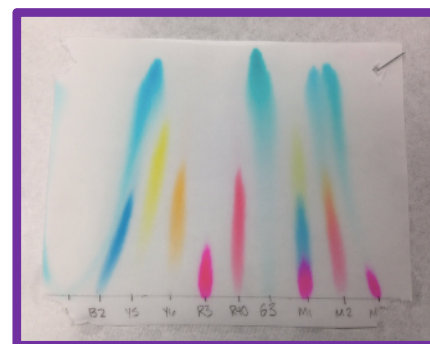
test

Can you think of examples of how each piece of equipment could be used?

See if you can find some pictures of the equipment being used in Scientific experiments.

## Chromatography

Chromatography is a method used to separate mixtures. It separates substances in a mixture. It works when the substances in a mixture are soluble in the same solvent (liquid). The picture made by chromatography is called a chromatogram.



Complete the sentences below.

- Chromatography separates substances in .....
- It works if all the substances in the mixture are soluble in.....
- The picture made by chromatography is called a .....

## Acids & Alkalis



Which of these substances are acids?

Which of these substances are alkalis?

How do you know?

Finally here are some recommended books to read over the summer:

**The Bacteria Book: The Big World of Really Tiny Microbes by Steve Mould**

<https://books.google.co.uk/books?id=NsjSDwAAQBAJ&printsec=frontcover&dq=Finally+here+are+some+recommended+books+to+read+over+the+summer:++The+Bacteria+Book:+The+Big+World+of+Really+Tiny+Microbes+by+Steve+Mould&hl=en&sa=X&ved=2ahUKEwiV4Onbx5fqAhW0unEKHerzDHwQ6AEwCXoECAUQA#v=onepage&q&f=false>

**The Element in the Room: Investigating the Atomic Ingredients That Make Up Your Home by Mike Barfield**

<https://books.google.co.uk/books?id=TifFtAECAAJ&dq=the+element+in+the+room&hl=en&sa=X&ved=2ahUKEwjM4PIyJfqAhVbRBUIHUMvBooQ6AEwAHoECAEQAg>

**Planetarium: Welcome to the Museum by Raman Prinja and Chris Wormell**

<https://books.google.co.uk/books?id=fXtqDwAAQBAJ&printsec=frontcover&dq=Planetarium:+Welcome+to+the+Museum&hl=en&sa=X&ved=2ahUKEwj6zvCmyZfqAhWVonEKHbLJAVQQ6AEwAHoECAUQA#v=onepage&q=Planetarium%3A%20Welcome%20to%20the%20Museum&f=false>