Park Academy West London
an Aspirations Academy

Year 8 Work Pack 3

B2.3 – Adaptation and inheritance

C2.3 – Metals and acids

B2.1 – Health and Lifestyle

C2.1 – The Periodic Table

Home learning 1 – Variation maths

Task 1:

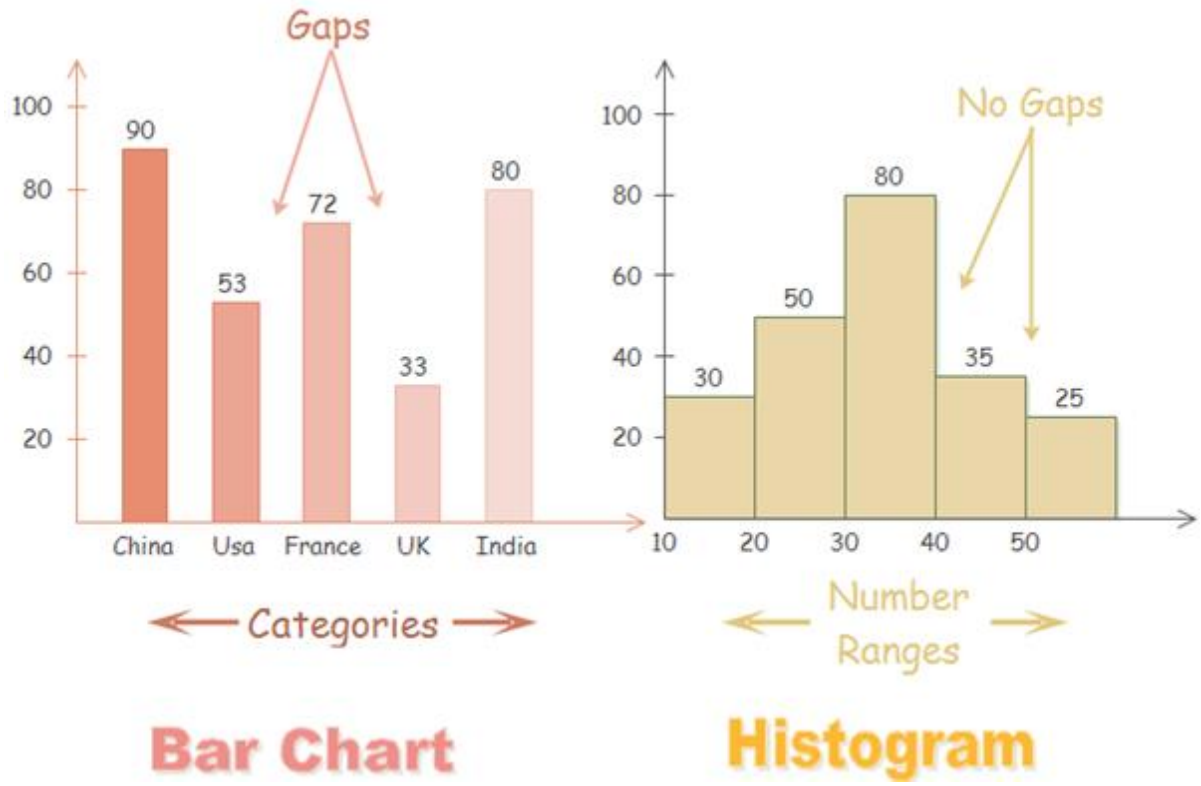
Collect 20 pieces of discontinuous data from friends, teachers and family. If you can't think of a piece of data, choose from these 3 options – favourite football club, country of birth or favourite member of one direction

Put your results into a table and draw a **bar chart** from them

Task 2:

Collect 20 pieces of continuous data from friends, teachers and family. If you can't think of a piece of data, choose from these 3 options – shoe size, height or length of forearm

Put your results into a table and draw a **histogram** from them



Home learning 2 – Polymers

Research a polymer

Write a newspaper article celebrating this new polymer!
Must include

- A snappy headline
- It's uses
- How it is made
- Pro/cons
- Fun facts
- Pictures/photos

Home learning 3 – Digestion model

You have a week to make a 3D labelled model of a human digestion sysem.

You can make it out of anything you like – in the past we have had them made of cake, lego, paper mache, card, plasticine etc. Take a picture and send it to us

You will be marked on the following:

To get…	**You have…**	**I have done this**
I	• Not handed in the model	
	• Produced a model which clearly didn't take a lot of time	
	• Not labelled the parts	
F	• Made a model and have labelled most parts correctly using correct key words.	
	• Described what cells are like and what they do.	
	• Matched some parts of the digestion system to their job correctly	
G	• Made an accurate model and have labelled <u>all</u> parts correctly.	
	• Included some knowledge of enzymes	
	• Described the job of each part correctly	
VG	• Made a SPECTACULAR(!!!) model	
	• Labelled parts that were not taught in the lesson with the correct function	
	• Correctly labelled other parts such as enzymes and bacteria <u>and</u> given their roles	

Home learning 4 – Useful Metals

This table shows some physical properties of different metals. Use it to answer the questions.

Metal	Strength (MPa)[1]	Density (g/cm³)	Electrical resistivity[2]	Thermal expansion[3]
aluminium	50–90	2.7	2.7	23
copper	224	8.7	1.7	17
magnesium	185	1.7	4.2	25
titanium	230–360	4.5	54	9

[1] MPa means megapascal. 1 MPa = 100 000 N/m².
[2] Resistivity is the opposite of conductivity: the higher this number, the more difficult it is for electricity to pass through.
[3] This number shows how much metal expands when hot: the bigger the number, the more it expands.

1 Which property of aluminium makes it a good choice for walls and roofs? Explain your answer.

_____

_____

2 Which property of aluminium means that it might *not* be a good choice for walls and roofs? Explain your answer.

_____

_____

3 Give one property that makes copper very useful for electrical wiring. Explain your answer.

_____

_____

4 Which property makes titanium better than copper for cladding walls in a hot country? Explain.

_____

_____

5 a Do the physical properties of magnesium suggest it would be useful in buildings? Explain.

_____

_____

b Think about the chemical reaction of magnesium when heated in air. How does this explain why magnesium is not used for cladding walls?

_____

6 When an architect was asked how he chooses the materials for his buildings he said 'I have to think about the "look" of my building and the budget, as well as the qualities of the materials, before I decide what to use.' Explain his answer.

_____

_____

Home learning 5 – Dating Advert

Choose a group 1, 7 or 0 element and write a dating advert for them.

It needs to include their position on the periodic table, their properties and uses.

You should be at least 2 paragraphs

E.g for a first paragraph

Hi my name is Neil Neon and I want to light up your world. I'm well connected as I have Noble heritage – I'm related to Arthur Argon and Xena Xenon. I won't lie I don't normally have much success with others, I just find that I'm pretty stable on my own. I'm quite rotund and full of electrons, but bigger is always better right.