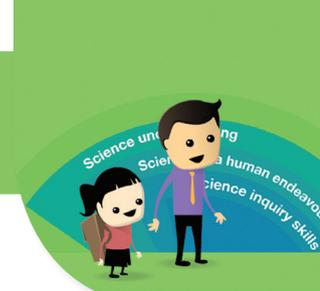


Science Bringing it to Life Year 7 – 8

Student Questioning Tool



Ask these questions to help you think, work and process like a scientist.

What do you observe?

What are the observable differences?

What changes over time and/or geographically?

What do you see/hear/smell/taste/feel?
What features and/or properties are the same?
What features and/or properties are different?
What equipment might help to make observations? (camera)
What equipment can extend your senses?
(hand lens, microscope, thermometer, scales, ruler, stopwatch)
What do you notice about this data/information?
What is interesting/unexpected?

How do these features and/or properties change over time and/or geographically?
What changes when you shift your perspective?

What patterns and relationships can you see?

How have changes in science knowledge over time changed the way we see the world?

What are your questions?

What patterns and/or relationships are there (in the data)? Are there any exceptions?
How do these patterns or relationships compare over time and/or geographically?
Are they always the same?
Is there anything unusual?
What do you think is happening and why?
How could you generalise?

What is the time scale over which these changes occur?
How might another discipline contribute to this?
How has science changed the way we see the world over time?

Is your question investigable?

What do you predict will happen?

If we changed..., how might that affect...?
What science idea might help you explain this?
What science will help you predict what might happen if...?
What do you already know or what have you observed that led to your prediction?
How does flow of energy and matter help you to think about this?
What other predictions might be plausible?
Scientists currently think... how does this relate to your idea...?

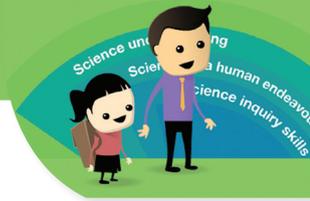
What investigations could you design?

Which variables will you control?

How can you use collaboration?
Where do you find connections across the disciplines?

How might you test your predictions?
Which variable (independent) will you manipulate? Why?
Which variable (dependent) will you measure? Why?
Which variables will you keep constant? Why?
What equipment do you need and/or have?
What equipment will you choose that will improve the accuracy in the data you collect?
What safety aspects do you have to think about?
How can you organise your data?

What might a scientist do to find out about that?
How might collaboration be of use to scientists?
Where do you find connections across the disciplines?
(biology, chemistry, physics, earth & space)



How can you review and communicate?

How can you represent the data and your explanations in a way that enables sharing with others?
What tools (list, table, graph, drawing) might you use to share this information and/or help you identify trends?
How does a science generalisation explain your data?
How can you use the evidence gathered to explain a science generalisation?
How fair was your test/investigation? How could it be improved?
How could you improve the quality of the data collected?
How might someone else explain or interpret this same phenomenon?
How could you improve your investigation?

Can you use a model to help describe, simplify, clarify or provide an explanation of the working structure or relationship within an object, system or idea?

Can you use a model to explain what you found out or how your idea works?

So what? What next?

Who might need to know this? Why?
Which of your decisions might this understanding influence? How?
What other science might help us understand this and/or make this decision?
What else could you/would you need to investigate?
How do we know this?
Which sources give you the most confidence that the information is accurate?