Science: Years 7–8

Pedagogical questions:
• What do you see/hear/smell/taste/feel?
• What features and/or properties are the same?
• What features and/or properties are different?
• How do these features and/or properties change over time and/or geographically?
• What changes when you shift your perspective?
• What equipment might help to make observations? (cameras)
• 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?

Example: Year 7 – Physical Sciences
Change to an object’s motion is caused by unbalanced forces acting on the object.

What happens when you stop quickly on your bike or your skateboard hits a rock?
What happens when a balloon is blown up?
What causes the marble to move or change movement?
How might this be different if the marble was on the moon?
Are there any exceptions?
Why are the stopping distances different?
What questions have you about forces and movement?

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?
Classify according to prior knowledge. Consider different time and geographical scales.
Describe matter and energy flows through systems. Consider structure and function relationships and how components within a system relate to each other.
Integrate ideas from different disciplines.
Describe exceptions.
Ask a variety of investigative scientific questions.

What do you notice about vehicle stopping distance?
What equipment might help to make observations?
What changes when you shift your perspective?
What is interesting/unexpected?

What do you predict will happen?
Make predictions based on scientific knowledge.

What investigations could you design?
How can you use collaboration?
Where do you find connections across the disciplines?
Which variables will you control?
Plan and carry out a safe and fair test using accurate measurements and controlling variables.

What do you observe?
What do you notice about this data/information?
What are your questions?
What are the observable differences?
What features and/or properties are the same?
What features and/or properties are different?
How do these features and/or properties change over time and/or geographically?
What changes when you shift your perspective?
What equipment might help to make observations?
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What do you notice about this data/information?
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Pedagogical questions:
• What do you notice about vehicle stopping distance data? (secondary data)

What changes over time and/or geographically?
Use of equipment to aid observations in order to group and classify. Link form to function both microscopic and macroscopic and notice observations that change over time and geographically. Make observations from secondary sources when necessary.

What changes over time?
What are the observable differences?
What features and/or properties are the same?
What features and/or properties are different?
How do these features and/or properties change over time and/or geographically?
What changes when you shift your perspective?
What equipment might help to make observations?
What equipment can extend your senses?
What do you notice about this data/information?
What is interesting/unexpected?

Pedagogical questions:
• If we changed…, how might that affect…?

Pedagogical questions:
• 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…?

Pedagogical questions:
• What might a scientist do to find out about that?
• 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?

Pedagogical questions:
• 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?

Pedagogical questions:
• What equipment might help you to make observations?
• What do you notice about vehicle stopping distance data? (secondary data)

What do you notice about vehicle stopping distance data?
What equipment might help you to make observations?
What do you notice about vehicle stopping distance data? (secondary data)

What do you observe?
What do you notice about this data/information?
What are your questions?
What are the observable differences?
What features and/or properties are the same?
What features and/or properties are different?
How do these features and/or properties change over time and/or geographically?
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