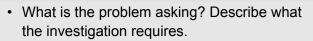# Prompting students to think, reason and work mathematically

identifying and describing mathematics

- What is the problem asking? Describe what the investigation requires.

- What mathematical ideas can you see in the situation?

- What mathematics do you know already that you can use in this investigation?

- What procedures or strategies can you use?

- What else might you need to find out about to help with this investigation?

- What do you predict will be the outcome of this investigation?

- Where do you think would be a good place to start?

- What resources can you use to help you?

- Where can you get help if you need it?

understanding and applying mathematics

- How could you find new information or learn about the mathematics you need for this investigation?

- What can you do to improve your understanding?

- Is the information you found relevant to this investigation?

- Can you see a pattern in the mathematics? How can you use the pattern to help you?

- Can you make connections or see relationships? How can you use the connections or relationships to help you?

- What else do you need to know or do to proceed with this investigation?

- Are there other procedures and strategies you could use?

- Do you have enough information to draw a conclusion? If not, what else do you need to do?

- Have you tried other ways to reach a solution?

- How have you checked your work?

- Is your solution close to your prediction? What is the same and what is different?

communicating and justifying

- How could you present your ideas to an audience?

- Is there a mathematical model you could use to communicate your ideas?

- Have you achieved a suitable solution? How can you be sure?

- What mathematics do you know now that you didn't know before?

- What evidence will you use to support your ideas?

- How would the knowledge, procedures or strategies you used in this investigation be useful in other situations?

- Are the ideas, procedures and strategies used by other students the same as or different from yours?

- How have the mathematical ideas of others influenced your thinking?