Year 11 Science: Writing up a local issue: from Achieved to Excellence

Name: _____ Date: _____

Try these without your notes first, then check the answer key.

Practice

1. Turn this fact into a science idea: "Some central Auckland beaches get black pins after heavy rain."

2. Explain why Safeswim scientists count enterococci instead of testing for every germ.

3. Explain how the Central Interceptor reduces overflows onto beaches.

4. Write one sentence that discusses why Ngāti Whātua Ōrākei's perspective matters to the response.

5. At a green pin the risk is under 2%; at a long-term red pin it is above 10%. Out of 100 swimmers, how many might get sick at each?

Fix the mistake

6. Correct this statement: "My report is long and has lots of facts, so it should get Excellence."

7. Correct this statement: "The iwi think the beach is dirty and the scientists think it is dirty too."

8. Correct this statement: "E. coli and enterococci are the germs that make swimmers sick."

9. Correct this statement: "The Central Interceptor cleans the sewage in the tunnel."

Answer key (for parents and tutors)

1. Turn this fact into a science idea: "Some central Auckland beaches get black pins after heavy rain."
   In older suburbs wastewater and stormwater share pipes, so heavy rain fills them past capacity and untreated wastewater overflows onto the beach.
2. Explain why Safeswim scientists count enterococci instead of testing for every germ.
   Enterococci live in the gut, so a high count shows faecal material is present, and with it the germs that cause illness; they are quicker and cheaper to count than every possible germ.
3. Explain how the Central Interceptor reduces overflows onto beaches.
   It gives the network much more room: about 226 000 m³ of storage, so stormy flows are held and sent to the Māngere plant at a rate it can treat instead of spilling out.
4. Write one sentence that discusses why Ngāti Whātua Ōrākei's perspective matters to the response.
   For example: The iwi's focus on the mauri of the harbour and its kaimoana means the response is judged by the long-term health of the Waitematā, not just whether a beach is green on one day.
5. At a green pin the risk is under 2%; at a long-term red pin it is above 10%. Out of 100 swimmers, how many might get sick at each?
   Green: fewer than 2 in 100; long-term red: more than 10 in 100.
6. Correct this statement: "My report is long and has lots of facts, so it should get Excellence."
   Grades come from depth: Excellence needs a discussion of why both perspectives matter to the response, not more facts.
7. Correct this statement: "The iwi think the beach is dirty and the scientists think it is dirty too."
   Give each group's reasons: the science view uses bacteria counts, while Ngāti Whātua Ōrākei judge the mauri of the harbour and its kaimoana.
8. Correct this statement: "E. coli and enterococci are the germs that make swimmers sick."
   They are indicator bacteria: they show that faecal material is present, and with it the viruses and bacteria that cause illness.
9. Correct this statement: "The Central Interceptor cleans the sewage in the tunnel."
   The tunnel stores and carries wastewater; treatment happens at the Māngere plant, at a rate the plant can cope with.