

Exploration Drilling

Topic: Mining

Background Information:

Exploration drilling is conducted to determine where ore bodies are located. Initially exploration drilling for bauxite mining occurs 120m apart. When ore is discovered, the exploration drilling is conducted at 60m, 30m and then 15m apart to establish where the actual ore bodies exist and to define the pit areas.

You Will Need:

- Fruit cake, (any implement that you feel you could use to extract fruit samples from the cake e.g. straws, toothpicks, forks)
- Cotton thread or string

What You Need to Do

- Select one of the fruits listed in the ingredients on the fruit cake.
- Using the threads, set out a “drilling area”.
- Select an implement that will have minimal impact on the cake, to establish if there are any concentrations of your chosen fruit in the cake.

Extension/ Alternatives

- Mine the cake to extract your chosen fruit.
- Rehabilitate the cake after mining to ensure you have minimised the impact of your operations.
- Instead of cake, use a watermelon (or any other melon) to explore for melon seeds.
- Use a marble or layer cake with icing to represent the topsoil.

Final Question:

What was the best implement to use for exploration drilling?
Which tool provided the best mining method with minimal impact to the cake (environmental impact)?

Curriculum Links:

Society and Environment: Place and Space, Resources, Investigation, Participation and Communication

Science: Investigating, Earth and Beyond

Mathematics: Measure, Chance and Data

