

Inference



Your NameDate.....

Sherlock Homes was famous for the logical thinking that he used to solve mysterious police cases. Today you need to use your brain to solve a mysterious phenomenon.



Experiment: This plum sinks

Equipment:

250 ml beaker plum

Salt

Pop-stick

Method:

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1. Place 150ml of water in a 250 ml beaker. Write your observations in the table.
 2. Add all the salt, and continue to observe what happens.
 3. Infer why the things you observed happened

5 The thinking skill you need to develop is called **inference**. When you make an inference, you are trying to come up with the explanation that best fits your observations. When explaining something, ask yourself 'Why did this happen?' or 'what is the way this may have happened?' An inference isn't always a correct explanation, but it should fit the **evidence**. You should always be ready to change your inference as more observations come to hand.

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In today's experiment, you will be making inferences about plums in water. You will need to make rigorous observations and to make a fitting inference from these observations. Follow the experimental method below.



Diagram 1: what will happen to a plum when salt is added to the water?

Part 1. Purpose of the text

Find the key ideas from the text, and their meaning in the context of the experiment. **Organise** below.

a. Title (purpose)



Key
word(s)



Line no.s

Meaning in

• _____

• _____

context

Part 2. Analyse the text again, and **synthesise** some predictions about what will happen.

a. I think when the plum is added to fresh water, then....

b. When salt is added, then...

Part 3. Now follow the experimental method.

a. **Generate** a list of observations, based on what you experienced with your senses:

Observations	Before adding salt	After adding salt
Sight		
Touch		

b. **Infer from observations:**

I think this happened because.....

c. **Egg-on-my-face:** **Reflect** on a time when you made some inferences that were not correct. What effect did this have?

d. **Synthesise** two questions you have after doing this writE Science sheet

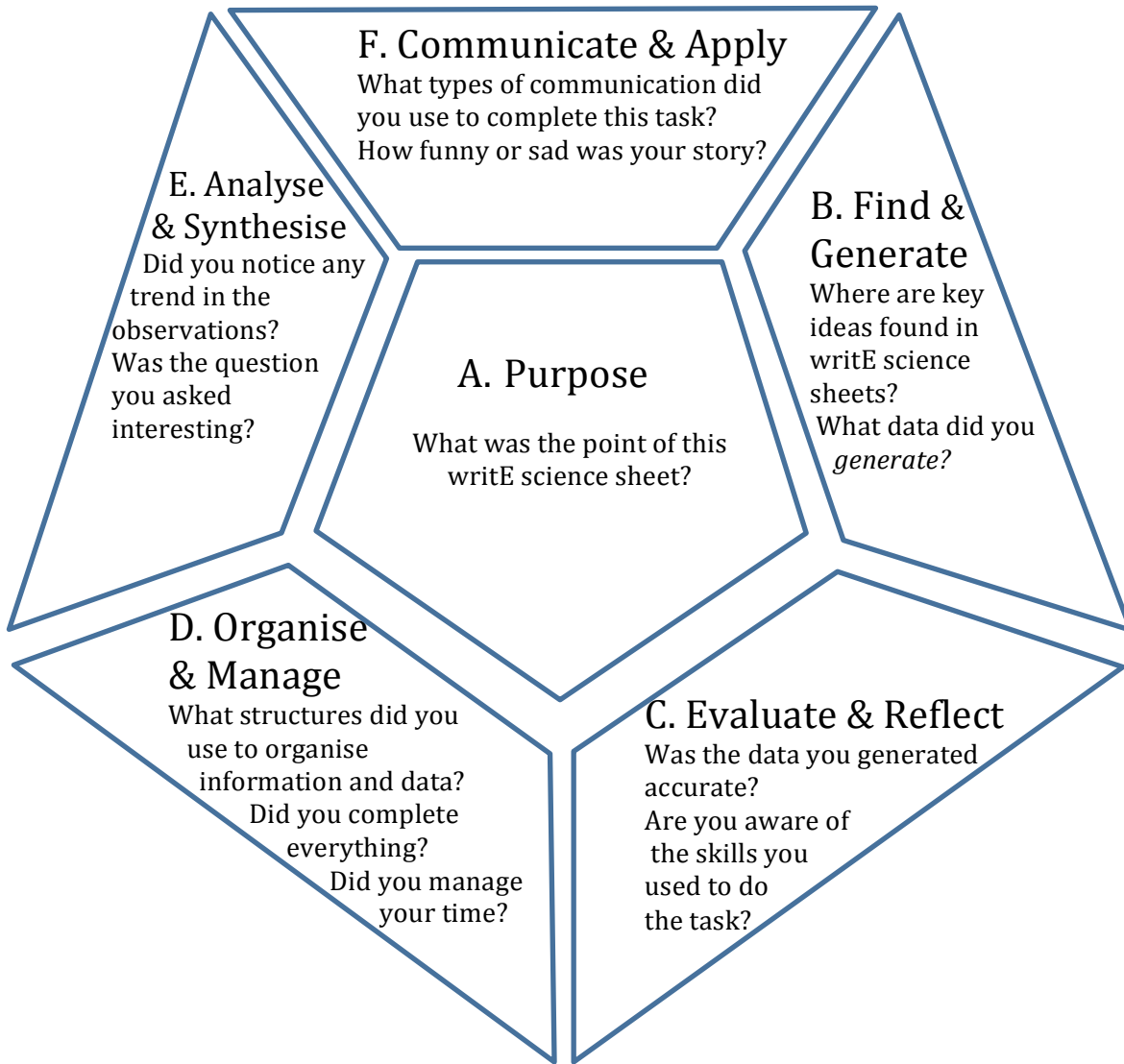
Part 4: Communicate and **apply** your understanding of the key words in the text by answering these questions about inferences.



a. Why can't you make good inferences about experiments without good observations?

b. How are inferences different from assumptions?

c. Is there a major difference between inferring from text and inferring from experiments?



Part 5. Evaluate and reflect.

Evaluate this activity and **reflect** by suggesting how to improve it.

Page 4 and onwards given out at teachers' discretion.

Teacher's notes:

writE was designed to be done skeleton side second, i.e., it explains the investigation in the text.

The only thing you have to ensure is that you buy plums that sink in tapwater. Don't assume that because some varieties do, all do. Likewise if you try with other fruit.

This investigation can be extended by using 1 or 2 L measuring cylinders, and adding different types of cut and uncut fruit (peel density is often different from that of the fruit inside) to water with a 'salt gradient' (salt crystals placed in cylinder, and water slowly poured in with cylinder at an angle, so there is much more dissolved salt down the bottom than towards the top).