

1) Make an observation or propose a question to be answered.

For example, you might observe two children seated on a seesaw. One child is elevated in the air and the other is seated at ground level. You might ask yourself, "Why is one child higher than the other?"

2) Next, you propose an answer to the question or possible explanation for what you have observed. This is also known as forming a hypothesis.

You might wonder if one child has some special ability for staying at a higher level than the other. You could also conclude that one child is stronger than the other. Or, you might guess that one child is heavier than the other causing that child to remain at ground level.

3) You then begin to test your ideas to see if one is correct. This is known as performing an experiment.

You could test each child separately to determine if they have special abilities that allow them to stay at a higher or lower level and interview them for information as to how they used the seesaw. You could also test their strength to see if one is stronger than the other. Finally you could weigh the children to see if weight is the cause of the difference in their level on the seesaw.

4) Next, you would look at and consider the results of your experiment. This is called analyzing the data.

If you find that neither child has special abilities or reasons for why they can achieve different heights on the seesaw, then you would rule this out as a possible cause. If you find that one child is stronger than the other, then you would keep this as a possible answer to your question. If you also discover that one child weighs more, you would add this to your list of possible answers.

You would then need to conduct an additional experiment to rule out one or the other factor as the possible answer for your question. For example, you could test their strength in maintaining a particular height on the seesaw. If this fails to show results, then you could determine that a higher weight level is the reason for one child remaining at ground level on the seesaw.

5) Once you have what you consider to be an answer to your question or problem, you then test this idea by repeating the experiment.

You could find two other children with approximately the same weight difference and see if you end up with the same results.

6) The next step in the scientific method is to see if others achieve the same results. This is known as achieving reproducible results.

You would invite others to see if they achieve the same results under similar conditions. If this is successful you might then confirm your hypothesis that having children of different weights on a seesaw will result in the heavier child remaining at ground level.