

What Do Explanations Look Like?

Making claims and providing explanations are important parts of what scientists do. An explanation is made up of three parts:

- **Claim** – a statement of what you understand or a conclusion that you have reached from an investigation or set of investigations
- **Evidence** – data collected during investigations and trends in that data
- **Science knowledge** – knowledge about how things work. You may have learned this through reading, talking to an expert, discussion, or other experiences.

An explanation is a statement that connects the claim to the evidence and science knowledge in a logical way. A good explanation is provided in a way that can convince somebody that the claim is valid.

For example, suppose you live in a city in the USA that gets cold and has snow in the winter. It is fall. You see a lot of birds flying past your home. You wonder why so many birds are flying by. You have learned that many birds cannot live in cold places. They fly to warm places (usually south) to spend the winter. You wonder if these birds are flying by your home on their way to a warmer place. You take out your compass and observe that the direction they are flying is south. You conclude that the birds are flying past your home to a warmer place where they will spend the winter. Look at how you can form an explanation.

Your claim:

Your evidence:

Your science knowledge:

Your explanation (for why there are so many birds flying south past your house):

An explanation is what makes a claim different from an opinion. When you create an explanation, you use evidence and science knowledge to back up your claim. Then people know your claim is not simply something you think. It is something you've spent time investigating. You have found out things that show your claim is likely to be correct.