1 What's the claim?

Start by figuring out exactly what the claim is, as well as what it isn't. Keep in mind that correlation isn't causation. Correlation is when two things change together—but the change could be due to chance, or to an unknown factor. Causation is a clear cause-and-effect relationship.

Does this mean eating ice cream causes crime?

2 Who says?

Be sure you know where the information came from. Any decent claim requires that someone stand behind it—preferably a well-respected source from a well-respected institution. Beware of "science by press release" and research funded by sources with vested interests.

Would it matter if a coffee company had done the research?

3 What's the evidence?

How much data was collected? The more information there is, the better. Numbers don't (usually) lie, so always consider the actual evidence when assessing a claim. And be sure to scrutinize charts and graphs. Visual data can mislead, but it can also tell hidden stories.

But what if the study involved only twelve people?

4 How did they get the evidence?

Where evidence is concerned, the devil is in the details. No matter the field, data collected different ways can support different conclusions, and errors may hide where they're least likely to be found. A systematic error is a flaw in a device or method that skews all the data. An uncontrolled variable is a factor that influences results, but hasn't been taken into account.

Surprised? What if we told you the poll was conducted at a playground?

5 Is there anything to back up this claim?

If there's one thing scientists agree on it's the need for reproducibility. For one person's research to be believable, others must be able to produce the same result. Has anyone confirmed the research? The newer and stranger the result, the greater the burden of proof.

Except it's really a mixture of bones from a cow and a mountain goat.

6 Could there be another explanation?

Sometimes, it's not the research methods or the data that's flawed, but the interpretation of the data. It's human nature to see what we're looking for—whether it's there or not—and to not see what we're not looking for.

Or maybe it was a guy with a plank and some rope.

7 Who cares?

Science happens in a social context, and that context determines whether research happens at all, whether and how the results are made public, and most important, the "spin" those results get in the media. Never take headlines or sound bites at face value. There's almost always more to the story.

Details at 11 ...

Can You Believe It?

7 Questions to Ask about Any Scientific Claim

We're all constantly confronted with scientific facts and factoids. Claims about household products, technology, medicine, and even politics often come steeped in the presumed authority of scientific research. How can we nonexperts decide what to believe? These 7 questions will help you separate science fact from science fiction.

Actually, we made that up. But how could you have known?