Claim, Evidence, & Reasoning (CER)

Writing Scientific Explanation
Curiosity Mars Rover-
Let’s watch a video

- https://youtu.be/oHLbXT0aw7w

As you watch the video, keep the following questions in mind.

1. What are these scientists curious about -- what do they want to know?

2. What data will the rover collect?

3. How will this data help scientists answer their questions?
What is a Scientific Explanation?

Claim + Evidence + Reasoning = Explanation

What do you know?  How do you know that?

Why does your evidence support your claim?
**Question:** What do you want to know?

**Claim:**
- A statement that answers your question

**Evidence for your claim:**
- Scientific data that support the claim
- Data need to be appropriate (pictures, graphs, table)
- Observation

**Reasoning (how your evidence justifies your claim):**
- Based on scientific principles
- Each piece of evidence may have a different justification for why it supports the claim
In class:

- **When?** We use CER-based narratives after completing a lesson.
- **Why?** CER-based narratives allow you to make connections between the lesson and the lab. Also, learning how to write in science is very important to your education as a whole.
- **How?** CER-based narratives are set up in a paragraph form (usually 5-7 sentences in length). There are times when it is necessary to include a data table, graph, or picture in with your evidence.
My Dad’s a Space Alien
I have evidence that proves my Dad’s a space alien.

He speaks a weird language. 
He drinks green stuff. 
He says he’s from Albuquerque (I’m not buying it). 
I mean, just look at him. 
And one more thing. He has a space ship.

The evidence doesn’t lie. 
My dad’s an alien.
### Writing an Explanation

**Question:** …

<table>
<thead>
<tr>
<th><strong>Claim:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Evidence:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>…</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Reasoning:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>…</td>
</tr>
</tbody>
</table>
Question: Who is my Dad?

Claim:
My Dad’s a space alien

Evidence:
- He speaks a weird language
- He’s from Albuquerque
- He drinks green liquids
- He dresses funny
- He drives a spaceship

Reasoning:
The evidence doesn’t lie...
**Writing an Explanation**

**Question:** Who is my Dad?

**Claim:**
My Dad’s a space alien

**Evidence:**
- He speaks a weird language
- He’s from Albuquerque
- He drinks green liquids
- He dresses funny
- He drives a spaceship

**Reasoning:**
- Aliens are not from Earth so they have their own language
- Some people believe that aliens have landed in NM
- Which is why many aliens are seen with green skin
- Aliens wear space suits for protection
- Aliens use spaceships to travel
Another example: Construct your C-E-R

Video #3
In your table group:

- Construct an argument around any topic you like.
- You will have 10 mins. total to write your argument.
- Data must be numerical
- Remember to link your data to your claim with reasoning!
- Write out your argument using C-E-R