



# Orientation to Groupwork

## Objectives

You will be able to

- Identify the parts of a scientific explanation: claim, evidence, and reasoning.
- Match a scientific question to appropriate claim, evidence, and reasoning statements.
- Evaluate the quality of the scientific explanation.
- Give reasons for your suggestions when matching the statements to the scientific questions.



*How do we work  
productively  
in groups?*

## Evaluation and Feedback

You will give feedback to each other about how to

- Play your roles in the group.
- Follow the Behavior Norms.

## Task 5: Practicing Groupwork Skills to Construct Scientific Explanations

**As a group:**

- Construct a scientific explanation about what will happen to water when a cup of water is turned upside down.
- Arrange sets of sample claim, evidence, and reasoning statements into scientific explanations.
- Share your scientific explanations with the class.

## Vocabulary

- claim
- evidence
- reasoning
- data
- justify
- observation
- refute
- scientific explanation

## Connect to the Culminating Project

Students are introduced here to specific Behavior Norms that will be utilized later in constructing scripted scenarios depicting certain norms.

## Part I • Constructing a Scientific Explanation



While watching the cup of water demonstration, construct a scientific explanation in your science notebook about what will happen when a cup of water is turned upside down.

## Part II • Practicing Constructing Scientific Explanations

Reminder: Use the Behavior Norms that you have learned to work productively as a group.

Task	Behavior Norm
Task 1: Broken Circles	<ul style="list-style-type: none"> <li>Pay attention to what other group members need.</li> <li>No one is done until everyone is done.</li> </ul>
Task 2: Role Playing	<ul style="list-style-type: none"> <li>Play your role in the group.</li> </ul>
Task 3: Master Designer	<ul style="list-style-type: none"> <li>Explain by telling how.</li> <li>Listen and pay attention to what is being said.</li> <li>Help other students do things for themselves.</li> </ul>
Task 4: Four-Stage Rocket	<ul style="list-style-type: none"> <li>Everyone contributes.</li> <li>Rephrase and build on others' ideas.</li> <li>Listen and pay close attention to what is being said.</li> <li>Be concise and get to the point quickly.</li> </ul>

- As a group, read the definition and example of a scientific explanation about pill bugs.  
Discuss how the pill bug example represents a scientific explanation that includes a claim, evidence, and reasoning statement.

SCIENTIFIC EXPLANATION		
The Parts of a Scientific Explanation	Definition of Claim, Evidence, Reasoning	Example of Claim, Evidence, and Reasoning Statements
<b>Claim</b>	A claim provides a possible answer to a big question or a solution to a big problem.	Pill bugs prefer to live in damp places.
<b>Evidence</b>	Evidence is data or information that supports or rejects the claim. Evidence can come from an investigation, direct observations, reading materials, or published data.	In our investigation, after 20 minutes, 25 out of 30 pill bugs were found on the damp paper towel and 5 pill bugs were found on the dry paper towel. We read a report that stated pill bugs have gills that need to be kept moist to capture oxygen from the air.
<b>Reasoning</b>	Reasoning provides a justification that links the claim and evidence. A “reason” should be a large scientific concept that describes why the evidence supports or disproves the claim.	Pill bugs prefer a damp environment because they need to keep their gills moist to capture oxygen from the air.

2. Use the claim, evidence, and reasoning statements found in your envelopes to construct scientific explanations for each of the questions.
3. Identify the claim, evidence, and reasoning statements in your envelopes.
4. Evaluate the quality of the scientific explanations.
5. Share your scientific explanations with the class.