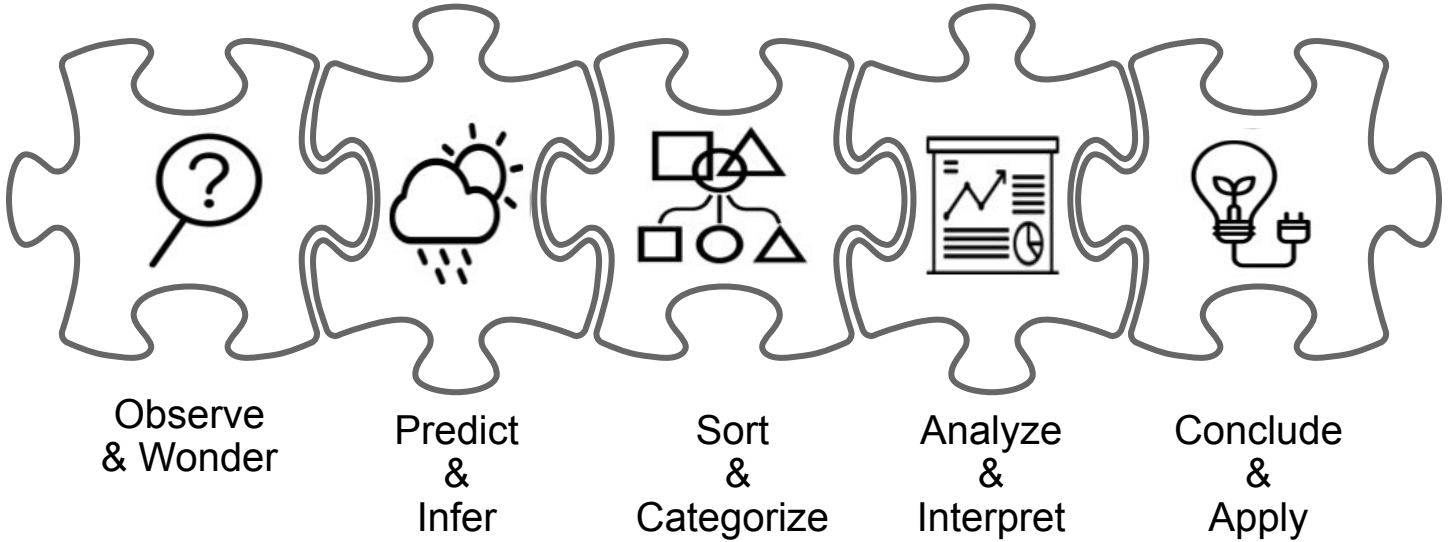


Fail-Safe Literacy Strategies For Science

The Thinking Routines



Thinking Routine: Observe & Wonder

Students ...

- use their senses to gather information about characteristics and changes to an object/event in order to spark their curiosity
- ask questions to connect to their prior knowledge and better understand what they're learning

Fail-Safe Strategy: See, Think, Wonder

Science Activity: Drops of Water on a Coin

See	Think	Wonder

Thinking Routine: Observe & Wonder
Fail-Safe Strategy: Wait! What?
Science Activity: Dancing Raisins

<https://youtu.be/FU8fmn42hgg>



Making Good Observations

Observations need to be accurate and objective, so ...

- Use as many sense as possible, BUT never taste substances being used
- Write down only what can be observed, not what you imagine is happening
- Base observations on physical properties of matter, e.g. size, shape, color, odor, texture, density, solubility
- Watch for changes over time
- Use scientific language where you can
- Include units of measurement, date, time
- Draw and label a picture of what you observe

Looking Closely: The Dry Raisins

1	
2	
3	
4	
5	
6	
7	

Looking More Closely: The Wet Raisins

1	
2	
3	
4	
5	
6	
7	



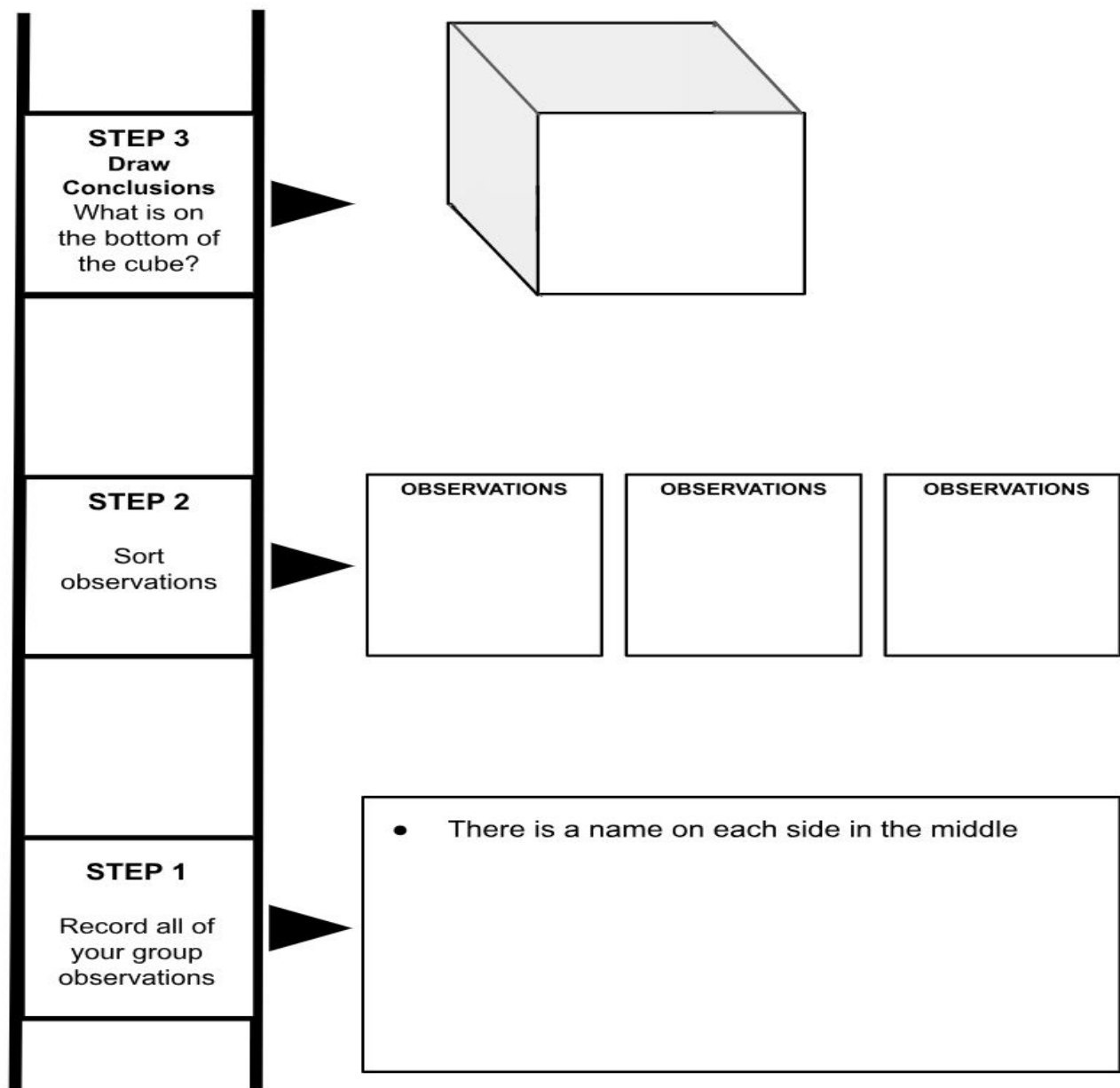
Thinking Routine: Predict & Infer

Students ...

- predict what will happen, based on their prior experience, knowledge and current observations
- infer a logical conclusion about a situation or event based on their scientific background knowledge and reasoning skills

Fail-Safe Strategy: The Inference Ladder

Science Activity: The Inference Cube



Thinking Routine: Sort & Categorize

Students ...

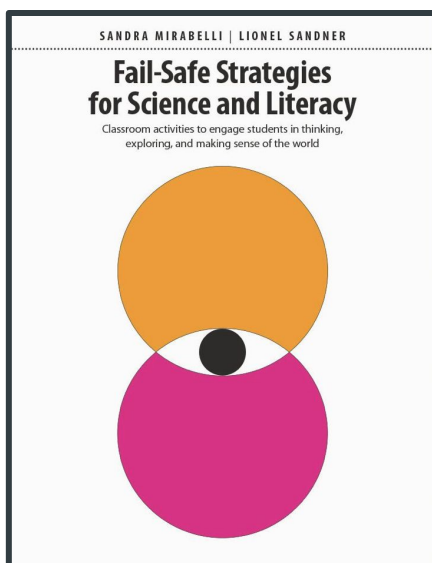
- create order out of objects that at first seem random or unordered, based on similarities
- identify why items are grouped together, based on attributes or relationships they see

Fail-Safe Strategy: Visual Word Sort

Science Activity: Static Action

Attract	repel	electrons	static electricity
electric force	charged	neutral	balloon
Gelatin	energy	stalagmites	charge

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November 2nd @ 7 p.m. ET
Fail-Safe Literacy Strategies for Science
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