

Student Discourse Planning Tool for Science

Discourse Level	Examples of Student Discourse
PF: PROCEDURES AND FACTS	
1. Short answer to a direct question	<ul style="list-style-type: none"> ▪ “24.” ▪ “I don’t think they are the same.” ▪ “I agree.” ▪ Students put thumbs up.
2. Restating facts/statements made by others	<ul style="list-style-type: none"> ▪ “Oh, I get it. You added baking soda to this mixture.”
3. Showing work/methods to others	<ul style="list-style-type: none"> ▪ “This is what I did.”
4. Explaining what and how	<ul style="list-style-type: none"> ▪ “First I counted the number of cycles each pendulum completed in 15 seconds. I made a table for my data. I used the table to plot the points on my graph.”
5. Questioning to clarify	<ul style="list-style-type: none"> ▪ “How did you make your paper airplane go farther than the other paper airplanes?”
6. Making observations/ connections	<ul style="list-style-type: none"> ▪ “Look, our methods are almost the same.” ▪ “A swing is like a pendulum.”
J: JUSTIFICATION	
7. Explaining why by providing evidence	<ul style="list-style-type: none"> ▪ “Water can penetrate the cell membrane. The water was absorbed by the egg, and this increased the egg’s weight.”
8. Challenging the validity of an idea by providing evidence	<ul style="list-style-type: none"> ▪ “I don’t agree that sound travels faster through the air than it does through a solid. This data shows that in every trial we conducted, sound traveled faster through solids.
9. Providing evidence to defend an idea that was challenged	<ul style="list-style-type: none"> ▪ “You don’t think plants can cause erosion, but our investigation shows that it is possible for a plant’s stem and roots to grow into a rock and move or crack the rock. I know this because we grew plants with plaster on top of the soil, and the plants pushed, cracked, or broke the plaster.
G: GENERALIZATION	
10. Making conjectures/predictions about what might happen in the general case or in different contexts	<ul style="list-style-type: none"> ▪ “I’ve heard of people using insulation in houses. So I think insulation would keep heat in a solar oven -- but would it also keep heat out?”
11. Explaining and justifying what will happen in the general case	<ul style="list-style-type: none"> ▪ “When I balance on a teeter-totter with my big brother, I sit at the end of my side, and he sits close to the middle on his side. So in order to balance the scale, the less dense mass has to be farther from the fulcrum, and the denser mass has to be closer to the fulcrum.”

- Classifications of levels from STUDENT DISCOURSE OBSERVATION TOOL, 2008 TEACHERS DEVELOPMENT GROUP modified
- Source: Dorothy Geary. Adapted for science by Kathy Darrow-Joiner, NWESD, 2012.

Student Discourse Observation/Debrief Tool

1. Short answer to a direct question	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PROCEDURES AND FACTS
2. Restating facts/statement made by others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Showing work/method to others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Explaining what and how	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Questioning to clarify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Making observations/connections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Explaining why by providing evidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	JUSTIFICATION
8. Challenging the validity of an idea by providing evidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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Which talk structures did you observe (circle all that apply)? Individual Pairs Small Group Larger Group/Whole class

Modes

Tools

T Student to Teacher

V Verbal

S Symbolization

= Student to Student

A Gesturing/Acting

N Notation

+ Student to Group

W Written

C Computers/Calculators

I Individual Reflection

G Graphically

O Other

M Manipulative

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