

## Build a Better Rubric for Analyzing Cause and Effect

### Learner Outcome

#### Science Grade 4

#### 4-5.12

Develop and implement a plan to reduce waste, and monitor what happens over a period of time.

#### 4-2.11

identify possible applications of what was learned

### THE NON-EXAMPLE

CRITERIA	Excellent	Proficient	Adequate
<b>Implements plan</b>	Implemented a plan that resulted in <b>significant</b> reduction of waste.	Implemented a plan that resulted in <b>some</b> reduction of waste.	Implemented a plan that resulted in <b>minimal</b> reduction of waste.

An AAC Non-example  
FOR DISCUSSION  
PURPOSES ONLY

### Let's Talk about It

The rubric descriptors in the above non-example focus on how successful a student's plan was at reducing waste. The evaluation of the effectiveness of the plan is being done by the teacher.

The science outcome asks the students to do the evaluation of the effectiveness of the plan as they "monitor what happens over a period of time". Students also need to use their analysis to consider applications of what they have learned.

### A BETTER CHOICE

CRITERIA	Excellent	Proficient	Adequate
<b>Describe impact of plan</b>	Provides an <b>in-depth</b> description of the plan's impact on waste reduction.	Provides an <b>substantial</b> description of the plan's impact on waste reduction.	Provides an <b> cursory</b> description of the plan's impact on waste reduction.

### Let's Talk about It

Analyzing cause and effect is a critical skill in the area of scientific inquiry. There is an expectation that plans and designs won't always work as expected, and that adjustments might be required. The front matter of the Science K-9 Program of Studies states, "When an unexpected observation is made or a procedure does not work, there is opportunity for new ideas to emerge and a new set of procedures to be followed."

Students will find it difficult to embrace the challenging process of scientific inquiry if they are being judged on the success or failure of their efforts.

This rubric makes it clear that the students will be responsible for considering the effectiveness of their plan. As with any qualitative descriptors, work samples depicting various levels of quality can help students understand and be able to use the rubric to improve the quality of their work in progress.