**﻿A&D Statements**

**﻿Description:**

Students use *A & D Statements* to analyze a set of "fact or fiction" statements. In the first part of the statements, students may choose to agree or disagree with the statement or identify whether they need more info. In addition, they are asked to describe their thinking about why they agree, disagree, or are unsure. In the second part of this assessment, students describe what they can do to investigate the statement by testing their ideas, researching what is already known, or using other means of inquiry. The following figure shows an example of *A & D Statements* for a third-grade unit on magnetism:

|  |  |
| --- | --- |
| Statement | How Can you Find Out |
| 1. **All magnets have 2 poles.**agree \_disagree\_it depends on \_not sureMy thoughts: |  |
| **2. All metals are attracted to magnets.****\_**agree \_disagree\_it depends upon \_not sureMy thoughts: |  |
| **3. Larger magnets are stronger than****smaller magnets.**\_agree \_disagree\_it depends on \_not sureMy thoughts: |  |
| **4. Magnetism can pass through****metals.**\_agree \_disagree\_it depends on \_not sureMy thoughts: |  |

**﻿How this FACT (Formative Assessment Classroom Technique) Promotes Student Learning**

*A &* D Statements provide an opportunity for students to practice metacognition-thinking about their own understanding. In addition, this FACT "primes the pump" for student inquiry by having students describe how they could design an investigation or identify information sources that would help them determine the validity of the statement. When used in small groups, *A & D Statements* provide stimuli to encourage scientific discussion and argumentation. Through the process of defending or challenging scientific arguments aimed at the statements, students may solidify their own thinking, consider the alternative views of others, and modify their own thinking as new information replaces or becomes assimilated into their existing knowledge and beliefs.

**﻿How this FACT Informs Instruction**

*A & D Statements* are best used at the beginning of a learning cycle to elicit students' ideas about a topic. The information helps teachers identify areas where students may need targeted instructional experiences that will challenge their preconceptions and increase confidence in their own ideas. The results can be used to differentiate instruction for selected groups of students who have similar ideas about the topic. Students' descriptions of how they can find out whether the statements are correct provide data the teacher can use regarding their ability to design experiments or identify appropriate scientific sources of information.

**﻿Design and AdministratiAon**

Select *A & D Statements* that focus on specific concepts and skills that students will encounter in the curriculum. Develop statements that can lead to inquiry with hands-on materials, books, videos, or other information sources. Students should first be given the opportunity to respond to the FACT individually. Then, have students discuss their ideas in small groups, coming to consensus on whether they agree with the statement while noting any disagreements among group members. After they have had time to consider each others' ideas and design a way to further test or research information, allow time for small groups to investigate the statements as exploratory activities. These activities provide a common experience for whole-class discussion aimed at resolving discrepancies between students' initial ideas and discoveries made during their explorations. The teacher should listen carefully as the class shares its findings, building off the students' ideas to provide guidance and clarification that will help students accommodate new understandings.

**﻿General Implementation Attributes**

Ease of use: Medium Time Demand: Medium
Cognitive Demand: Medium

**﻿Modifications**

The FACT can be modified for younger students by focusing on one statement at a time, rather than a set of statements.

**﻿Caveats**

The FACT should not be used solely as a "true or false" assessment. It is important to provide follow-up experiences for students to investigate the statements, particularly those in which there is a conflict between students' preconceptions and the scientific ideas.

**﻿Use in other disciplines**

This FACT can also be used in math, social studies, language arts, health, foreign languages, and performing arts.

Keeley, Paige. (2008) *Science Formative Assessment: 75 Practical Strategies for Linking Assessment, Instruction, and Learning.* Thousand Oaks, CA: Corwin Press.