10 Ways to Teach Leadership Through Math and Science

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How do we inspire a new generation of great mathematicians and scientists? One way is to create curiosity about how leadership fits into math and science.

Leadership connections are abundant and easily recognized in reading and social-studies lessons. Using teachable moments to discuss characters in books and world leaders happens with little to no prompting. As teachers, we can do the same thing in math and science if we are intentional and plan for the teachable moments.

Math and science have plenty of opportunities for integration if we look through the lens of leadership. Here are 10 suggestions and examples:

1. The scientific method starts with asking a specific question. Effective leaders always begin with a purpose or an "end in mind."

2. The procedures used in an experiment have a specified order. The skill of prioritization is a valuable leadership habit.

3. Scientists and mathematicians often work in groups to complete research. Leaders value others' opinions and listen to learn from their peers.

4. Chemical reactions can create totally new products. This is comparable to leaders working together to create a completely new idea that no one had thought of individually.

5. The languages of the Eight Standards for Mathematical Practice in the Common Core contains multiple connections to leadership.

- ***"Construct viable arguments and critique the reasoning of others."*** When students are involved in this process they learn respect, critical thinking, and communication skills. In some *Leader in Me* Schools, student groups use a "Talking Stick," inspired by a Native American tradition, where the Talking Stick is passed from student to student. Each student speaks without interruption, and all other students listen intently until everyone has had a turn and feels understood.
- ***"Model with mathematics."*** Use mind maps, graphic organizers, or foldables to reinforce mathematical models and to help students lead their own mental constructs. This standard helps students organize and take leadership of their own learning.
- ***"Look for and express regularity in repeated reasoning. The student maintains oversight of the process while attending to the details."*** Leaders always keep the big picture in mind while attending to the details, and this standard helps students practice that skill.

Students drew house plans to practice planning skills while learning area and perimeter.

6. When teaching the area and perimeter of shapes, many teachers have students draw house plans. Planning is an important leadership skill.

7. Tracking academic goals with multiple data trackers helps teach valuable graph- and chart-reading skills while simultaneously motivating students to keep reaching for their personal best.

8. Current leaders of math or science can provide examples of leadership for students. Students can keep a yearlong journal or blog about these individuals and write about how they exhibit leadership qualities.

9. Many trade books are available for math and science content. As students read these books, teachers can be intentional about using leadership language. NSTA recommends several trade books here: http://www.nsta.org/publications/ostb/ostb2014.asp

10. Some grade levels have science standards related to environmental issues. The leadership skill of thinking in a mutually beneficial way could be applied here. For example, Westwood Elementary in Arkansas recycles Capri Sun pouches and donates the money to help dig water wells in Africa.

Once we start looking at all subjects through the lens of leadership, the connections will become second nature. I've shared my ideas, and I'd love if you'd share yours in the comment section.

Math and science skills are the building blocks of a healthy economy. As you teach these subjects through the lens of leadership, you do more than share facts and formulas. Just imagine—you may inspire the next Albert Einstein, George Washington Carver, or Marie Curie!