
Habits of Mind

1. **Be Curious and Ask Questions.**

We want students to be inquisitive and discover mathematics through their own explorations. We want them to see that mathematics is about ideas, not numbers and equations, and that doing mathematics involves asking questions and exploring, not following directions and plugging numbers into formulas. We also want students to ask "How do I know?", develop a questioning attitude, consider what information is needed, choose strategies to get that information, and identify the obstacles needed to resolve problems.

2. **Use Critical Thinking.**

We want students to learn to think critically, to ask their own questions, and to challenge anything that does not make sense. Students should explore consequences of their ideas. In addition, mathematics is a wonderful framework for showing that our intuition is often faulty, and that logical reasoning and mathematics can often be used to deduce truths and to convince others of these truths. We want students to trust their own power of reasoning, and to trust what they know to be true even if it conflicts with public opinion.

3. **Realize the Value of Learning From Mistakes.**

Many students are math phobic or have math anxiety. They are often scared to give the wrong answer or look foolish in front of peers. We design positive experiences in our lessons, provide a supportive environment, and emphasize that everyone makes mistakes in mathematics. We want students to understand that learning something new involves mistakes, and that these mistakes should be embraced rather than avoided. Whenever mistakes are made, we want the students to ask "Why did that not work?" and use this information to focus on developing new insight and ultimately succeeding. We also want students to realize that taking risks is essential in exploration and discovery, and that risk and failure are unavoidable aspects of learning. Keep in mind the following quote: "If you're not prepared to be wrong, you will never come up with anything original." -- Sir Ken Robinson

4. **Think Flexibly.**

We want students to be able to change perspective, generate alternative approaches, and weigh options. We emphasize the importance of original, quality thinking over rote manipulation of formulas, and we encourage students to use abstraction, generalization, different perspectives, and conjectures as they approach problems. We also want students to apply past knowledge to new situations, and apply knowledge beyond the situation in which it was introduced.

5. **Think Interdependently.**

We want students to be willing to work with others and welcome their input and perspective. They should abide by decisions the work group makes even if they disagree somewhat, and be willing to learn from others in reciprocal situations.

6. **Develop Persistence.**

We want students to learn to follow tasks through to completion, stick with something that is difficult, and remain focused.

7. **Communicate with Clarity and Precision.**

We want students to be clear and accurate when speaking and writing. We also want them to avoid generalizations, distortions, minimizations and deletions when explaining their ideas.