



# A+ MATHEMATICAL PRACTICES

for emerging mathematicians in Montana

1

**PROBLEM  
SOLVE AND  
PERSEVERE**

2

**ABSTRACT  
AND  
GENERALIZE**

3

**JUSTIFY  
AND  
PROVE**

4

**CULTURALLY  
CONNECT**

5

**MODEL  
WITH  
MATHEMATICS**

6

**REPRESENT**

**COLLABORATE**



# 7

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## 1

*Mathematically proficient students problem-solve and persevere by:*

- making conjectures, plan, and follow solution strategies,
- evaluating their progress and accuracy,
- engaging in sense-making and self-monitoring,
- persevering in seeking solutions, and
- valuing alternative approaches.

## 2

*Mathematically proficient students abstract and generalize by:*

- decontextualizing and symbolically representing both mathematical and non-mathematical situations to search for and analyze regularities, patterns, and structures.

## 3

*Mathematically proficient students justify and prove by:*

- creating, evaluating, justifying, and refuting mathematical claims in developmentally and mathematically appropriate ways.

## 4

*Mathematically proficient students model with mathematics by:*

- making sense of a scenario,
- identifying a problem to be solved, mathematizing it, and
- applying a mathematical model to reach a solution and verifying its viability.

## 5

*Mathematically proficient students represent by:*

- recognizing, using, creating, interpreting, and translating representations using appropriate methods and tools, and
- understanding multiple ways of representing mathematical ideas and how they are related.

## 6

*Mathematically proficient students collaborate mathematically by:*

- engaging in mathematics as a social enterprise through discussion and collaborative inquiry where ideas are offered, debated, connected, and built upon toward solutions shared understanding and appreciation of other perspectives.

## 7

*Mathematically proficient students culturally connect by:*

- recognizing cultural connections and contributions to mathematics, and
- appreciating the role of mathematics in various cultural contexts, including those relating to Montana Indigenous Peoples and local communities.

These mathematical practices, as written here, are DRAFTED for 2024 adoption, pending Board of Public Education Approval.

These standards reflect the work of the Task Force and Negotiated Rule-Making Committee and are presented to the BPE by Superintendent Artzen in recommendation for approval by the BPE.

If adopted, Montana will become the first state to adopt a cultural connection mathematical practice, underscoring its commitment to mathematics instruction that connects students to their communities and experiences.

