# Designing Mathematical Provocations to Inspire Student Thinking

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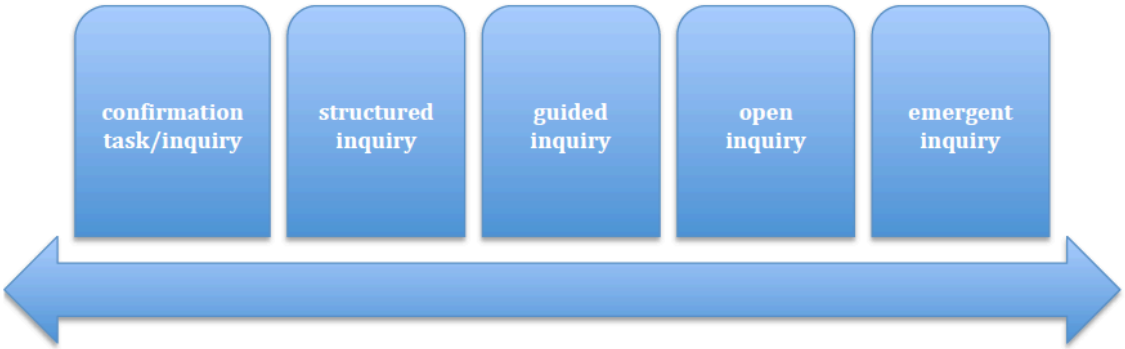
**BC K-9 Curricular Competency**

- *Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving*

**Spectrum of Inquiry**

**goal is to provide opportunities for students to ask their own questions and pose their own problems*

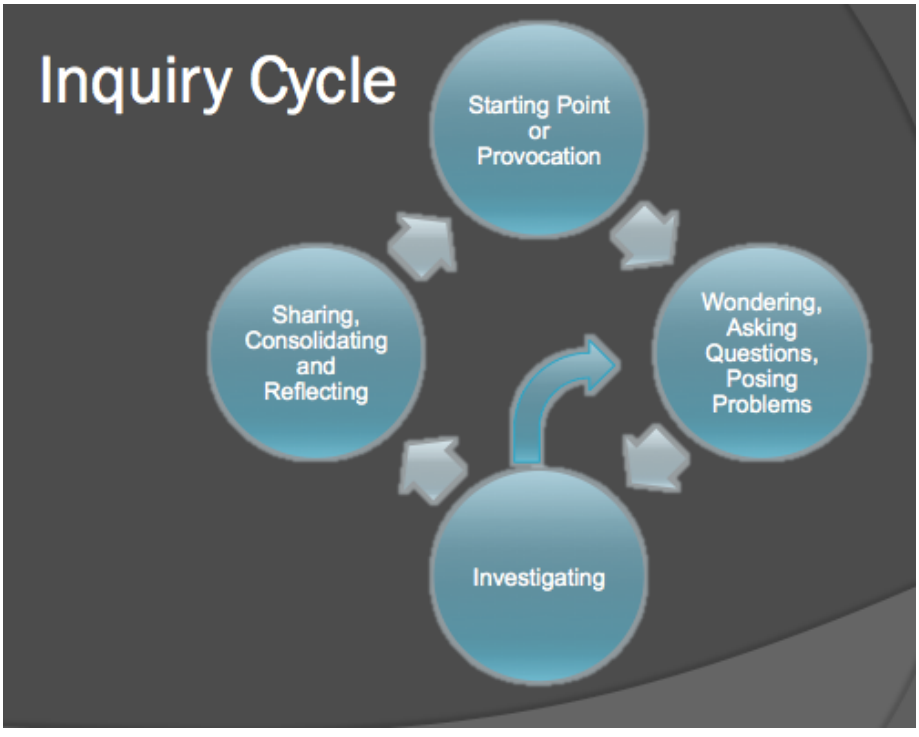



**BC K-9 Curricular Competency**

- *Connect mathematical concepts to each other and to other areas and personal interests*

**Making Connections**

- math to self
- math to world
- math to math




**What is playful mathematical inquiry?**

- *playing with materials*
- *playing with language*
- *playing with ideas*

# Provocations

**Provocations can be structured, guided or open. They are responsive to students' interests and wonders, provoke thinking, are connected to a big mathematical idea and often linger.**

**Where do provocations come from?**

- the students' wonders and interests
- the big ideas and curricular content & competencies/practices/processes
- making math to math, math to self or math to world connections
- a starting point

**What can be a provocation?**

- materials or tools
- a question, a story, a puzzle or problem
- a word or a quote
- a place
- a piece of art, music or a map
- informational text or graph
- local or global news
- an issue important to the students – school-based, social justice, environmental

**Some frames for provocations:**

- What stories live within…?
- What do you notice? What do you wonder?
- What is the relationship between….?
- What are the connections between…?
- What happens when…?
- How many different…?
- How do these materials help you think about…?
- Where do we see…in the world?

**Developing Provocations**

- Planning with intention – knowledge of curriculum and your students
- Being thoughtful about what materials will be offered
- Create opportunities for collaboration
- Choose a big idea, curricular competency and/ or content
    - How will you provoke thinking and learning?
    - What materials will you use?
    - Will you use direct prompt, implied prompt through modeling or open exploration?
    - How do you anticipate your students will engage with your provocation?
    - How will students' learning be made visible?

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