



# Holyoke Public Schools Mathematics Curriculum Map Grade 1

## Fish Lengths and Animal Jumps

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## Curriculum Maps

### GOALS:

1. To ensure that students are exposed to a rigorous curriculum in every school and every grade.
2. To have consistent instruction and assessment district wide.
3. To prepare students for the MCAS test.
4. To explain what is expected to be covered in each CMP or Investigations Unit.

### EXPECTATIONS:

The district's expectation is for students to successfully meet the Massachusetts Mathematics Standards. In order to help facilitate this, teachers are required to follow the curriculum maps. The successful implementation of these maps requires teachers to thoroughly read each lesson in the TE and work through the project and problems in the map and the text prior to planning their lessons. Work should be kept in the binder with the curriculum map. Working through the math is an essential part of lesson planning, as it helps the teacher to better understand the concept being taught and the students' possible misunderstandings.

### FEEDBACK TO STUDENTS:

Feedback needs to happen daily in the classroom. There are many ways to give feedback. Conferencing, observations, questions asked during your opening, work time and closing are all forms of feedback.

### MAP COMPONENTS:

1. GENERAL PROBING QUESTIONS
2. UNIT SPECIFIC PROBING QUESTIONS
3. GOALS OF UNIT, CONTENT STANDARDS, & PERFORMANCE STANDARDS
4. PROJECT- to be done at end of unit and kept in the portfolio.
  - o STUDENT MASTER – for project
5. INVESTIGATIONS:
  - o NOTEBOOK - includes: folder, Bound Notebook, Portfolio
  - o ACCOUNTABLE TALK – using probing questions
5. ON-DEMAND ASSESSMENTS - to be done during teaching of unit.
  - o STUDENT MASTERS- for on-demand assessments.

# Mathematics

## Evidence of Learning Artifacts

<b>Artifact</b>	<b>K - 1</b>	<b>2 - 5</b>	<b>6 - 8</b>
<b><i>folder</i></b> <b><i>(F)*</i></b>	<ul style="list-style-type: none"> <li>○ Student Work<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>○ Vocabulary</li> <li>○ Student sheets<sup>1</sup></li> </ul> <p style="text-align: center;"><b><u>All work should be dated and listed by investigation</u></b></p>	<ul style="list-style-type: none"> <li>○ Math books</li> <li>○ Vocabulary</li> <li>○ Core Problems<sup>1</sup></li> <li>○ Lab sheets</li> </ul> <p style="text-align: center;"><b><u>All work should be dated and listed by investigation</u></b></p>
<b><i>Marble Notebook</i></b> <b><i>(MJ)</i></b>	<ul style="list-style-type: none"> <li>○ Journal entries<sup>2</sup></li> </ul>	<ul style="list-style-type: none"> <li>○ Table of Contents</li> <li>○ Problem of the day</li> <li>○ Journal entries</li> <li>○ Class work</li> </ul> <p style="text-align: center;"><b><u>All work should be dated and listed by investigation in the Table of Contents</u></b></p>	<ul style="list-style-type: none"> <li>○ Table of Contents</li> <li>○ Work time</li> <li>○ Journal entries</li> </ul> <p style="text-align: center;"><b><u>All work should be dated and listed by investigation in the Table of Contents</u></b></p>
<b><i>Portfolio</i></b> <sup>3</sup> <b><i>(P)</i></b>	<ul style="list-style-type: none"> <li>○ On-demand tasks</li> <li>○ Projects</li> <li>○ Teacher anecdotal notes</li> </ul>	<ul style="list-style-type: none"> <li>○ On-demand tasks</li> <li>○ Reflections</li> <li>○ Projects</li> </ul> <p style="text-align: center;"><b><u>All work should be dated and listed by investigation</u></b></p>	<ul style="list-style-type: none"> <li>○ On-demand tasks</li> <li>○ Reflections</li> <li>○ Projects</li> </ul> <p style="text-align: center;"><b><u>All work should be dated and listed by investigation</u></b></p>

\* Folders may be used in place of binders for these grade levels

<sup>1</sup> Send home at the end of each unit

<sup>2</sup> Use grade level math journals

<sup>3</sup> All documents should be kept for the entire year

## **Fish Lengths and Animal Jumps** **Probing Questions for Accountable Talk**

As students progress through this unit, they should be asked the following questions to assess their knowledge about measurement.

What are some reasons why the measurements are not the same?

How can you be sure your measurement is accurate?

How do the measurements compare?

What is the difference between the measurements? How can you tell?

### ***Classroom Routines***

#### ***Continue from Unit 1***

Start With/Get To

Quick Images

Morning Meeting

#### ***New to this Unit***

Quick Survey Sessions 1.4 & 2.4

Classroom Routines offer practice and review of key concepts at each grade level. After their initial introduction, these short activities, designed to take no longer than 10 minutes, support and balance the in-depth work of each curriculum unit.

Implementing Investigations in Grade 1: Please review pages 24-38 for the 4 routines in this unit.

## Additional Probing Questions for Accountable Talk

The teacher's role in probing for understanding is to ask questions that will:

- Clarify student understanding
- Get at the objective of the lesson
- Go deeper into the mathematics
- Uncover misconceptions and misunderstandings
- Compare and contrast

The students' role is to be an active participant by:

- Explaining their strategies
- Asking clarifying questions to teacher and other students
- Being active listeners
- Using the language of mathematics

When probing for understanding the teacher and students can use one or more of these suggested questions:

- Why are you using  $< >$ ?
- What are the ways you could  $< >$ ?
- What else do you know?
- How do you know that?
- Can you show that?
- What convention did you use here?
- What can you do if you do not know?
- What standard does this work apply to?
- Is this always true?
- How does this connect to other mathematics we have learned?
- What is the same and what are the differences between  $< >$ ?
- Can you back that up?
- Where is the math in your sketch?
- What does the answer mean?
- Does the answer make sense?
- Could you have used another operation to solve this task?
- Can you give examples?
- Can you say it another way?
- What's the math?
- Tell me about the task in your own words?
- What are you trying to find?
- How did you make your estimate?
- Will your answer be an over-estimate or an under-estimate? Why?
- I noticed that you used  $< \dots >$  to help you understand the task. Can you show us what you did and tell us how it helped you?
- Where do you see  $< >$  in your  $<$ model, diagram, number line, chart, etc. $>$ ?
- How can we see  $< >$  in your  $<$ model, diagram, number line, chart, etc. $>$ ?
- You have used a representation that is different from others that I've seen. Can you show us your  $<$ model, diagram, number line, chart, etc. $>$ , and tell us how it helped you?
- How did you decide to solve the task? Why did you choose that method?
- Did you try any method that didn't work?
  - Tell us what you tried.
  - Why didn't it work?
  - Would it ever work?

# Goals, Content Standards, & Performance Standards

## Unit Goals:

- Demonstrate accurate measuring techniques when measuring a distance with standard and nonstandard units.
- Know at least one way of describing a measurement that falls between two whole numbers.
- Understand the same result should be obtained when the same object is measured twice or when two different people measure the same object.
- Understand that measuring with different-sized units will result in different numbers.

## Math Content Standards:

- (2.M.1) Identify parts of the day (morning, afternoon, and evening), days of the week, and months of the year. Identify dates using a calendar.
- (2.M.3) Compare the length, weight, area, and volume of two or more objects by using direct comparison.
- (2.M.4) Measure and compare common objects using metric and English units of length measurement, e.g., centimeter, inch.
- (2.M.5) Select and correctly use the appropriate measurement tools, e.g., ruler, balance scale, thermometer.

## Performance Standards:

- (M2d) Determines and understands length, area, and volume.
- (M2h) Choose appropriate units of measure.

# UNIT: Fish Lengths and Animal Jumps

## End-of-Unit Project

GRADE: 1

<p><b>End-of-Unit Project (P)</b></p> <p>Student work should be placed in portfolio (P).</p> <p>The project is the culminating assessment which will allow students to apply what they learned in the unit. It is written in MCAS form to give students the experience of answering an open-response question.</p>	<p>End-of-Unit Assessment: Unit 5, M34 - <u>Resource Binder</u>, “Resources Masters and Transparencies”</p>
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# UNIT: FISH LENGTHS AND ANIMAL JUMPS

Investigation 1 (1.1 – 1.6)

DAYS: 6

GRADE: 1

<p><b>Evidence of Learning Artifacts</b></p> <p>Journal and Reflection questions should be posted and referred to at the beginning of the appropriate <i>Investigation</i>.</p> <p>Journal and Reflection entries need to be done in class as part of the closure and assessment.</p>	<p><i>Vocabulary</i> – Measure, length, measurement</p> <p><i>Work Time</i> – Student Sheets 1 – 15</p> <p><i>Journal Entries</i> –</p> <p><b>Inv. 1.1 –1.3</b> How can you be sure that you have an accurate measurement?</p> <p><b>Inv. 1.4 –1.5</b> Explain how to compare the length of two different fish.</p> <p><b>Inv. 1.6</b> None due to assessment</p> <p><i>Reflection</i> – Sam has a fish that is 13 inches long and Juan has a fish that is 9 inches long. Whose fish is the longest? By how much? How do you know?</p>
<p><b>Accountable Talk</b></p> <p>To promote learning, explore solutions, and justify reasoning, conversations between students and students or students and teacher must be accountable – accountable to the learning community, to the mathematics discipline, and to rigorous thinking.</p>	<p><i>As a result of this Investigation, students should be able to talk and manipulate the vocabulary of the Investigation in response to this type of question:</i></p> <p>How did you know that? How can you use ...? Can you show another way? What convention did you use?</p> <p><i>These are some recommended questions that you might use. Others can be found at the beginning of the map and on the probing question sheet in the district mathematics guide.</i></p>

# UNIT: FISH LENGTHS AND ANIMAL JUMPS

Investigation 2 (2.1 – 2.5)

DAYS: 5

GRADE: 1

<p><b>Evidence of Learning Artifacts</b></p> <p>Journal and Reflection questions should be posted and referred to at the beginning of the appropriate <i>Investigation</i>.</p> <p>Journal and Reflection entries need to be done in class as part of the closure and assessment.</p>	<p><i>Vocabulary</i> – Distance, longest, shortest</p> <p><i>Work Time</i> – Student Sheets 16 - 29</p> <p><i>Journal Entries</i> –</p> <p><b>Inv. 2.4</b> If you measure the length of your paper with paper clips on one day and craft sticks on another day, with which unit would you predict there would be more of? Why?</p> <p><b>Inv. 2.5</b> None due to assessment</p> <p><i>Reflection</i> – Describe what might happen to the measurement of an object when different sized units are used?</p>
<p><b>Accountable Talk</b></p> <p>To promote learning, explore solutions, and justify reasoning, conversations between students and students or students and teacher must be accountable – accountable to the learning community, to the mathematics discipline, and to rigorous thinking.</p>	<p><i>As a result of this Investigation, students should be able to talk and manipulate the vocabulary of the Investigation in response to this type of question:</i></p> <p>How did you know...? Can you solve the problem in a different way? Does your answer make sense? What was your strategy?</p> <p><i>These are some recommended questions that you might use. Others can be found at the beginning of the map and on the probing question sheet in the district mathematics guide.</i></p>

# End-of-Unit Project

Student work should be placed in **portfolio (P)**.

The project is the culminating assessment which will allow students to apply what they learned about measurement. It is written in MCAS form to give students the experience of answering an open-response question.



# On-Demand Assessments

(To be filed in portfolio)

## Fish Lengths and Animal Jumps Investigations

In class individualized On-Demand tasks assess knowledge of mathematical facts, operations, concepts, and skills, and their efficient application to problem solving. The results of these different forms of assessment provide rich profiles of students' achievements in mathematics and serve as the basis for identifying curricula and instructional approaches to best develop their talents.

# UNIT: FISH LENGTHS AND ANIMAL JUMPS

## On-Demand Assessments

GRADE: 1

### On-Demand Assessments (P)

#### Fish Lengths and Animal Jumps Investigations

In class individualized On-Demand tasks assess knowledge of mathematical facts, operations, concepts, and skills, and their efficient application to problem solving. The results of these different forms of assessment provide rich profiles of students' achievements in mathematics and serve as the basis for identifying curricula and instructional approaches to best develop their talents.

**Inv. 1:** Resource Binder: Session 1.6 M28  
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**Inv. 2:** Resource Binder: Session 2.5, Assessment Checklist M29\*

\*Assessment Checklists should be kept with tracking sheets.(if there is an assessment that we are asking them to use

**\*\*Please refer to the section in the Teacher's Unit Guide entitled, "Professional Development" for examples of student work for each assessment.**

Name \_\_\_\_\_

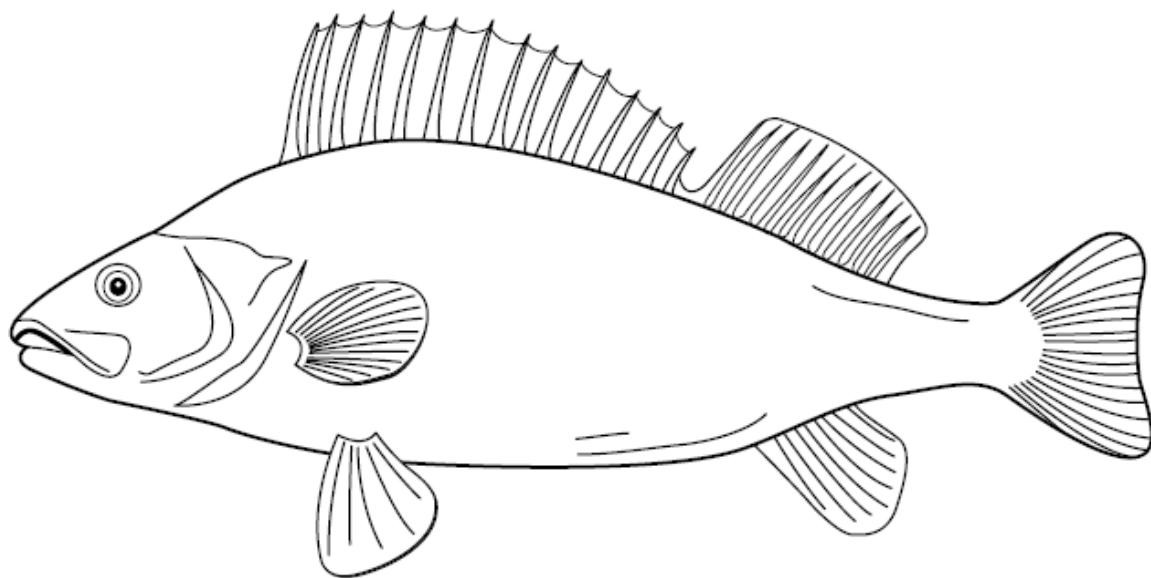
Date \_\_\_\_\_

**Fish Lengths and Animal Jumps**



## Assessment: How Long Is This Fish?

Measure this fish with tiles. How long is it? \_\_\_\_\_



Kim measured this fish with tiles. She said that it was 4 tiles long. Can Kim be right?

How do you know?

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# Holyoke Public Schools

## Mathematics Scoring Rubric

### Score point 4:

The response shows a **comprehensive** understanding of the mathematical concept(s) and/or procedures embodied in the task(s). It indicates that the student has **completed the task(s) correctly**, using mathematically sound procedures. It contains **clear, complete explanations** and/or **adequate work required**.

### Score point 3:

The response shows a **general** understanding of the mathematical concept(s) and/or procedures embodied in the task(s). It indicates that the student has **completed the task(s)**, using mathematically sound procedures. It contains **complete explanations** and/or **adequate work required**.

### Score point 2:

The response shows a **basic** understanding of the mathematical concept(s) and/or procedures embodied in the task(s). It addresses **most aspects of the task(s)**, using mathematically sound procedures. It may contain a correct solution but provides **incomplete procedures, reasoning and/or explanations**. It may reflect **some misunderstandings** of the underlying mathematical concepts and/or procedures.

### Score point 1:

The response shows a **minimal** understanding of the mathematical concepts and/or procedures embodied in the task(s). It addresses **some elements of the task(s) correctly** but reaches an **inadequate solution and/or provides reasoning that is faulty or incomplete**. It exhibits **multiple flaws related to a misunderstanding of important aspects** of the task(s), **misuse** of mathematical procedures, or faulty mathematical reasoning. It reflects a **lack of essential understanding** of the underlying mathematical concepts. It may contain a correct numerical answer but the **required work is not provided**.

### Score point 0:

The response is **completely incorrect, irrelevant, or incoherent**, or contains a correct response arrived at using an **obviously incorrect procedure**.

# NOTES