

# National Standards Alignment for 79825 Rainwater Runoff Design Challenge

## Next Generation Science Standards

### Matter and Its Interactions

**5-PS1-3** Make observations and measurements to identify materials based on their properties.

### Earth's Systems

**5-ESS2-1** Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.

**5-ESS2-2** Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.

### Earth and Human Activity

**5-ESS3-1** Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

### Engineering Design

**3-5-ETS1-1** Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

**3-5-ETS1-2** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

**3-5-ETS1-3** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

**Science and Engineering Practices: 5, 6, 7**

## CCSS Mathematics

### Numbers & Operations—Fractions

**5.NF.B.3** Interpret a fraction as division of the numerator by the denominator ( $a/b = a \div b$ ). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

**5.NF.B.4a** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. Interpret the product  $(a/b) \times q$  as  $a$  parts of a partition of  $q$  in  $b$  equal parts; equivalently, as the result of a sequence of operations  $a \times q \div b$ .

### Measurement & Data

**5.MD.A.1** Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

**Standards for Mathematical Practice: 1, 3**

## CCSS English Language Arts

### Writing

**W.5.1** Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

**W.5.2d** Use precise language and domain-specific vocabulary to inform about or explain the topic.

### Speaking & Listening

**SL.5.3** Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.

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