CORE Assessment Module
Module Overview

Content Area	Mathematics
Title	Linflower Seeds
Grade Level	Grade 7
Problem Type	Performance Task*

Standards for Mathematical Practice	**Mathematical Practice 2 (MP2):** Reason abstractly and quantitatively.
	Mathematically proficient students:
	• Make sense of quantities and their relationships in problem situations.
	• Bring two complementary abilities to bear on problems involving quantitative relationships:
	  ○ Decontextualize—to abstract a given situation and represent it symbolically; and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents) and
	  ○ Contextualize— to pause as needed during the manipulation process in order to probe into the referents for the symbols involved).
	• Use quantitative reasoning that entails creating a coherent representation of the problem at hand, considering the units involved, attending to the meaning of quantities (not just how to compute them) and knowing and flexibly using different properties of operations and objects.
	
	Mathematical Practice 4 (MP4): Model with mathematics.
	Mathematically proficient students:
	• Apply the mathematics they know to solve problems arising in everyday life, society, and the workplace.
	  ○ In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community.
	  ○ By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another.
	• Make assumptions and approximations to simplify a complicated situation, realizing that these may need revision later.
	• Identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas.
	• Analyze those relationships mathematically to draw conclusions.
	Interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

Common Core State Standards	**7.RP.2** Recognize and represent proportional relationships between quantities. **7.RP.2a** Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. **7.RP.2b** Identify the constant of proportionality (unit rate) in tables, graphs,

	equations, diagrams, and verbal descriptions of proportional relationships. **7.RP.2c** Represent proportional relationships by equations. • **7.EE.B** Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
SBAC Assessment Claims	**Claim 2: Problem Solving**—Students can solve a range of complex, well-posed problems in pure and applied mathematics, making productive use of knowledge and problem solving strategies.
Task Overview	Students will be asked to solve some constructed response questions involving proportional relationships. In Part 2 of this task, students will fill in a table and graph the values from the table. In Part 3, students will apply their proportional reasoning to a real-world situation.
Module Components	1) Scoring Guide 2) Task

*Adapted from MARS task.

Linflower Seeds
Scoring Guide

Part	Description Credit for specific aspects of performance should be given as follows:	Points	Total Points
1	1. a. Student gives correct answer: 15 Student explains that $\frac{75}{100} = \frac{3}{4} / \frac{3}{4}$ ´ 20 / 0.75 x 20 (Credit can be given for incorrect arithmetic, but correct process)	1 1	2
	b. Student circles 6 marks Student explains that $\frac{1}{4}$ will not grow / $\frac{1}{4}$ of 24.	1 2	3
2	2. a. Student fills in table with correct values. Student may use any ordered pair that meets the equation $y = 0.75x$ for the table entries where both x and y are not given. X: 40, 80, 120 Y: 0, 15, 45,60, 90	2	2
	b. Student correctly sets the graph scales and graphs all points from their table.	3	3
3	Student responses should include: 3. A table of x- and y-values where the relationship is proportional a. An explanation that uses the slope, an equation, or coordinates as justification b. An equation 4. A table of x- and y-values where the relationship is non-proportional a. An explanation that uses the slope, an equation or coordinates as justification b. An equation	 1 1 1 1 1 1	6
	TOTAL POINTS: (possible points = 16 points)		

Student Name _____

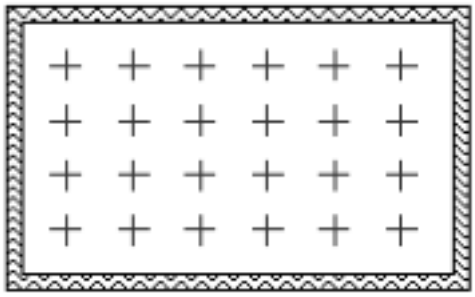
Linflower Seeds

Part 1

1. Tim grows linflowers from seeds. But not all of his seeds start to grow. He has found that for every 100 seeds he sows, only about 75 start to grow.

   a. Tim sows 20 linflower seeds. How many would you expect to grow? Explain your reasoning.

   b. Tim sows 24 seeds in a box. Each mark on the box below shows the position of a seed.



   Guess which of the seeds start to grow. Draw circles around the seeds that do *not* start to grow. (Note: There is more than one correct way to show your answer to this question.)

   Explain your reasoning.

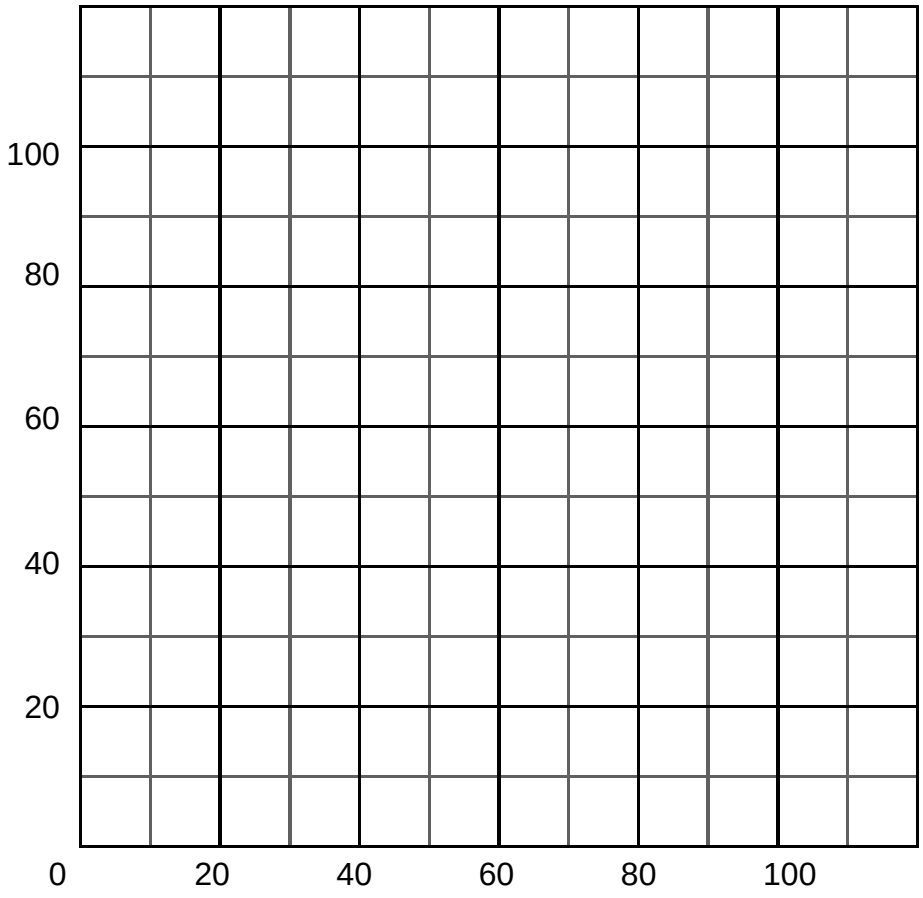
Student Name _____

Part 2

2. a. Fill in the table showing the number of seeds planted compared to the number of seeds that start to grow.

Number of Seeds Planted (*x*)	0	20		60		100	
Number of Seeds That Grow (*y*)			30			75	

b. Graph your table.



Student Name _____

Part 3

Tim has been hired by the city to plant snapdragons in the park. Again, the number of seeds he plants does not yield the same number of flowers. Answer the following questions to help Tim plan for his park job. You get to decide how many of the planted seeds will sprout.

3. Create a table of *x*- and *y*-values that represents a proportional relationship for your snapdragons.

   a. Explain how you know the relationship is proportional.

   b. What equation models the values in the table?

4. Create a table of *x*- and *y*-values that represents a linear, non-proportional relationship.

   a. Explain how you know the relationship is non-proportional.

   b. What equation models the values in the table?