

Jason's Tree House

Jason's Tree House

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| Summary | Students will extract data from a story and use tables and graphs to answers questions about proposed scenarios. |
| Goals | 1. Comprehend different variations of slope of a linear function that are not always positive and not always whole numbers. |
| Materials | Handouts |
| Duration | 50 minutes |
| Keywords | Contextualized Situations Fractional Slope Full Class Discussion Function Representations Linear Functions Negative Slope Production of Equations Production of Graphs Production of Tables Small Group Work x-intercept y-intercept |

Activity Plan:

Jason and his friends are playing in a tree house that is 30 feet off the ground. Jason has some baskets, each connected on a rope to different cranks that help him to carefully get things up to and down from his tree house. Jason has noticed that some of the baskets take longer to get up to and down from his tree house.

The basket connected to crank 1 (C1) goes down 3 feet with every 1 turn of the crank. The basket connected to the second crank (C2) goes down 1 foot with every 2 turns. The basket connected to the third crank (C3) goes down 3 feet with every 2 turns.

On the next pages, complete the table and graph for how far each basket is from the ground as a function of how many times the crank has been turned. (Handout Page 1)

Ask: Which basket will reach the ground with the fewest number of turns? How do you know?

Students will then work in small groups to draw tables and graphs that represent, for each basket, the relationship between number of turns and distance from the ground in number of feet. They are also asked to determine the x -intercept, y -intercept, and the equation for each function. (Handout Pages 2 -5)

Questions:

1. How many turns of the gear does it take for each basket to reach the ground?
2. Why are the slopes of the lines going down?
3. Why might some baskets go down more with each turn than others?

Handout: Jason's Tree House

(Page 1)

Name: _____ Date: _____

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On the next pages, complete the table and graph how far each basket is from the ground as a function of how many times the crank has been turned.

Which basket will reach the ground with the fewest number of turns?

How do you know?

Name: _____ Date: _____

C1

| Number of times crank is turned | Distance of basket to the ground (in feet) |
|--|---|
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| | |
| | |



Name: _____ Date: _____

C3

| Number of times crank is turned | Distance of basket to the ground (in feet) |
|--|---|
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| | |
| | |
| | |
| | |
| | |
| | |

Name: _____ Date: _____

C1, C2, and C3

