

# Comparing Different Functions

## Comparing Different Functions

Click [here](#) to download lesson.

To see a video clip of this lesson being implemented in a third grade classroom go to [The Best Deal Problem - Third Grade](#).

Summary	The students will discuss, represent, and solve a verbal problem involving the choice between two functions.
Goals	1. Use diverse representations to solve a problem.
Materials	Overheads, White Board or Chart Paper, Handouts
Keywords	Compare/Contrast Functions Contextualized Situations Equivalence Full Class Discussion Interpretation of Stories Interpretation of Tables Linear Functions Non-Linear Functions Production of Stories Production of Tables Small Group Work

### Activity Plan:

#### 1. Representing the Two Options as Patterns [Whole Class]

Show the problem using the overhead on Page 1 and ask the children to read it.

Ask the children to state what they would prefer.

Ask the children to show on the board which deal is better.

[Since large quantities are involved, it turns out that dots do not provide a convenient representation for the problem. Therefore children should work on numbers to represent the amounts.]

## 2. Representing the Two Options on a Table [Group Work]

Distribute the handout (Page 2) and display the corresponding overhead (also Page 2) and ask children to complete the two tables and to state, in writing, what they would prefer.

## 3. Discussion of Handout: Comparing the Two Functions [Whole Class]

Ask a few volunteers to present and discuss their answers. Ask questions such as:

*Is one option better than the other? Always?*

*When is option 1 better than option 2?*

*When is option 2 better than option 1?*

*Are there days when the two options will give you the same amount of money gained on that day?*

*Is there a day when the two options will give you the same total amount of money?*

## 4. Homework (Page 3)

They will solve a problem similar to the one they discussed in class. Note that there is a "take away" condition in Deal F. The problem here is to recognize that Deal F eventually loses to deal H.

## Overhead: The Problem

(Page 1)

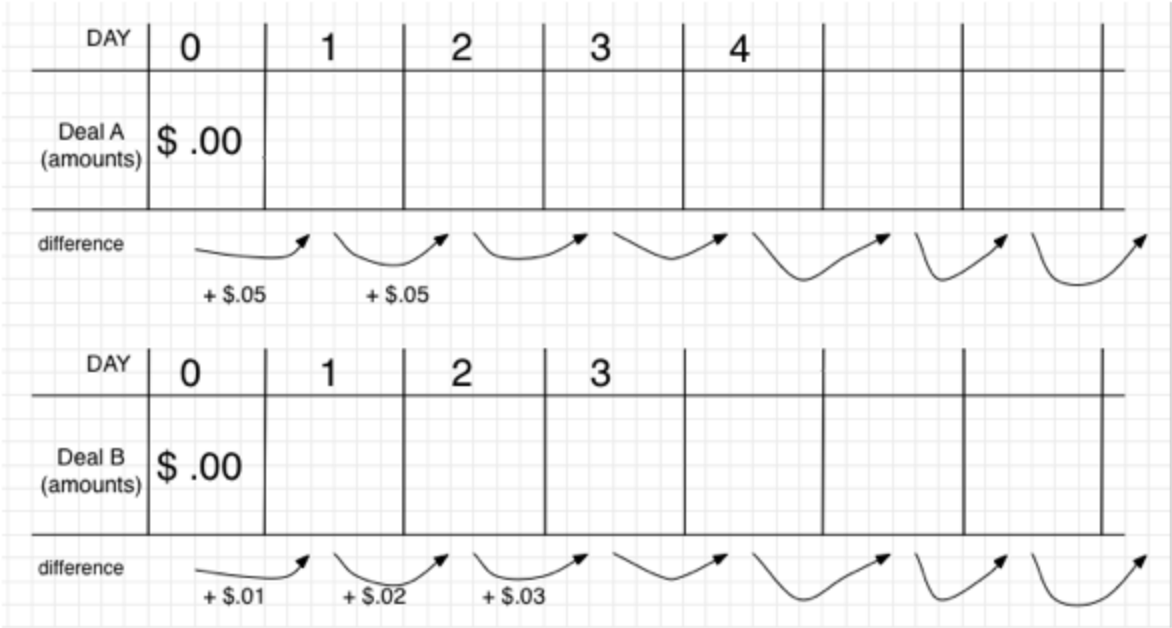
Your grandmother offers to give you, for the whole year:

- **Deal A:** 5 cents on each day
- **Deal B:**
  - She gives 0 cents on day 0
  - She gives 1 cent on day 1,
  - She gives 2 cents on day 2,
  - She gives 3 cents on day 3, and so forth.

Which deal would you accept, **Deal A** or **Deal B**? Show that the deal you chose is better than the other one.

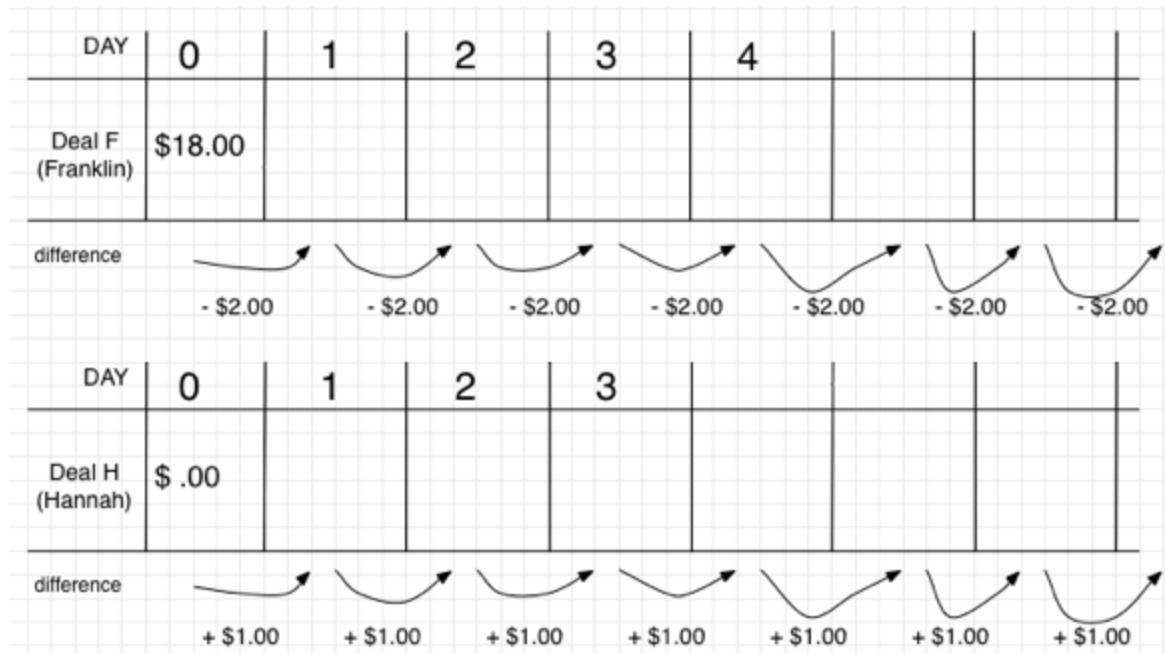
**Overhead and Handout: Representing the Problem**  
**(Page 2)**

Name: \_\_\_\_\_ Date: \_\_\_\_\_



Which deal is better? Explain.

Name: \_\_\_\_\_ Date: \_\_\_\_\_



Franklin takes **Deal F**. Explain how his deal works.

Hannah takes **Deal H**. Explain how her deal works.

Whose Deal is better after 3 days? Explain.

Will Franklin and Hannah ever have exactly the same amount of money? Explain.