

Untangling the Money Trajectory

Value-Counting and Problem Solving in Grades 1-5

Please Sign In to Receive PPT and Handout: <https://bit.ly/2CNYMSS>

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President, Council of Presidential Awardees in Mathematics

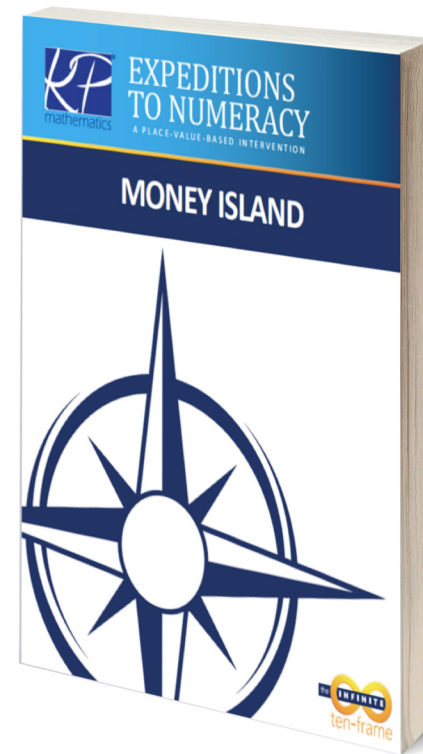
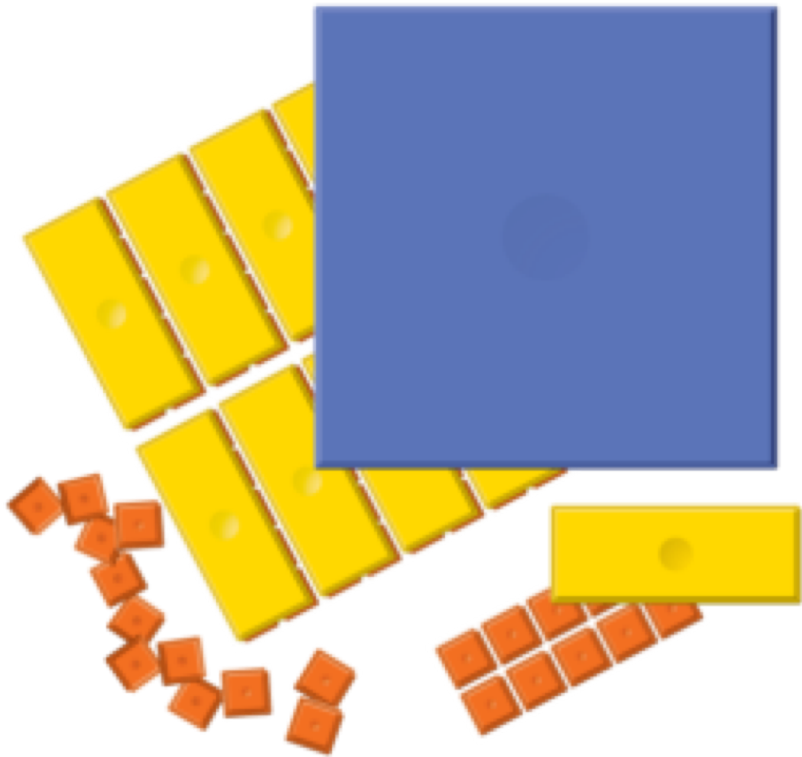
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Learning Goal

The participants will examine 5 issues regarding money and explore new ways of thinking about value-counting and problem solving with money.

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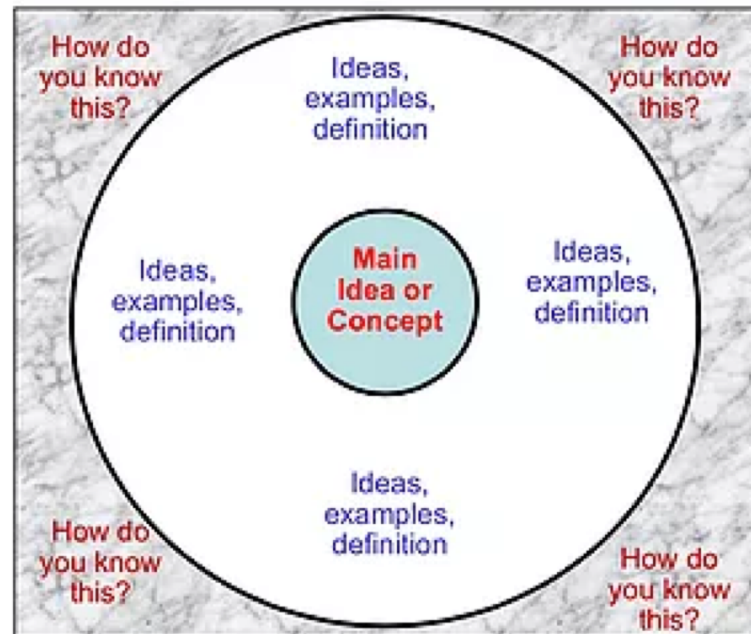
Performance Goal

The participants will use at least one idea from this session with students or with teachers within one week after returning from the NCTM conference.

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Why is Value-Counting Money So Difficult?

CIRCLE MAP



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Why is Value-Counting Money So Difficult?

- **Counting to ____**
- **Number recognition to ____**
- Understanding the relationship between **whole numbers** (bills) and **decimals** (coins)
- **Skip counting** by 5s, 10s, 20s, 25s, etc.
- **Skip counting from various starting points**
- **Unitizing/grouping**
- **Number sense** skills (place value, whole numbers, fractions, decimals, comparing numbers, etc.)
- **Composing and decomposing** numbers
- **Addition**
- **Subtraction**
- **Proportional thinking** (ten pennies in a dime; two nickels in dime; etc.)
- Identifying coins by name and value while realizing that the **physical representations** of the coins do not reflect their relative value (they are actually abstract representations)

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Money Trajectory in K-5

**Naming
(K-1)**

**Identifying
and using
values
(1-2)**

**Counting and
comparing
sets
(1-3)**

**Creating
equivalent
collections
(1-4)**

**Selecting
for a given
amount
(1-4)**

**Solving
word
problems
(2-5)**

**Making
change
(4-5)**

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Issue 1

COIN NAMES VS. COIN VALUES

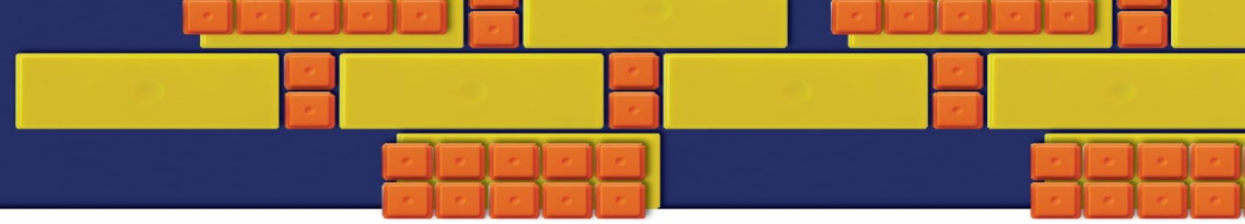
Formative Assessment



Formative Assessment



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Formative Assessment

1

5

10

1

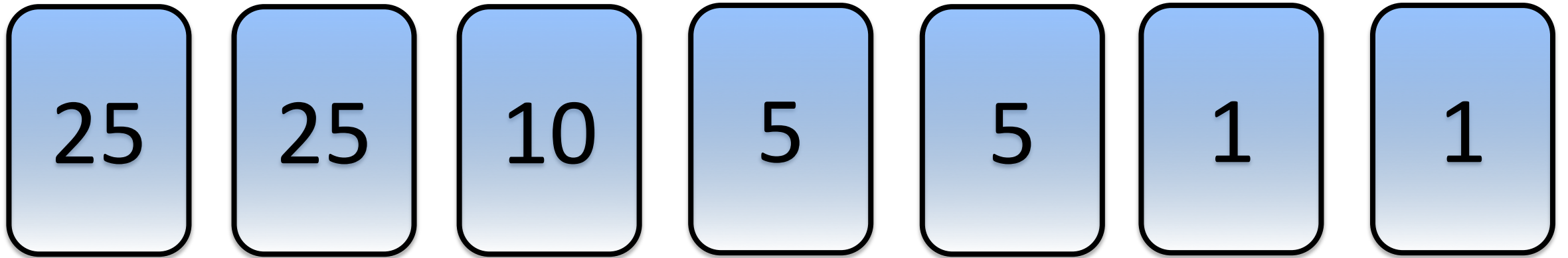
25

5

25



Formative Assessment

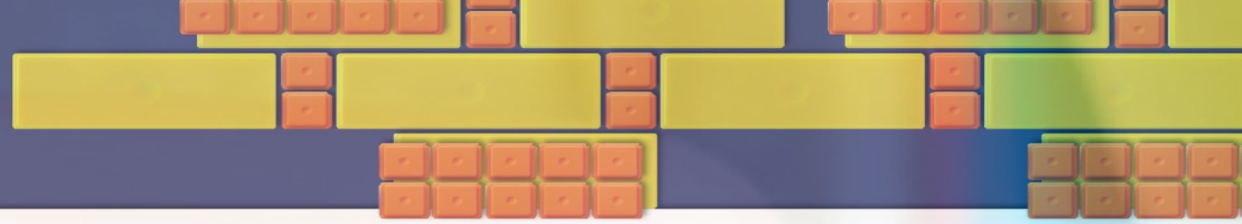


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Formative Assessment

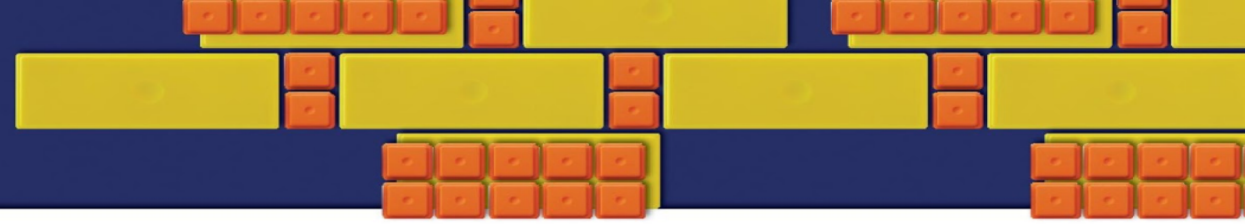


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A young girl with dark hair, wearing a yellow shirt, is lying on her stomach on a wooden table, counting coins. She is holding a clear plastic jar filled with coins in her right hand. The background is a soft-focus image of the same girl and the coins.

**What if they can sequence
the numbers but not the coins?**

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Issue 2

COINS VS. BILLS



Which first???



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Instructional Sequence: Counting by Denominations

- Counting single denominations
- Counting on by 1s
- Counting on by 5s
- Counting on by 10s
- Counting on by 20s or 25s

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Denomination Addition



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Denomination Addition

10

1

25

5

5

1

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Denomination Addition



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Denomination Addition



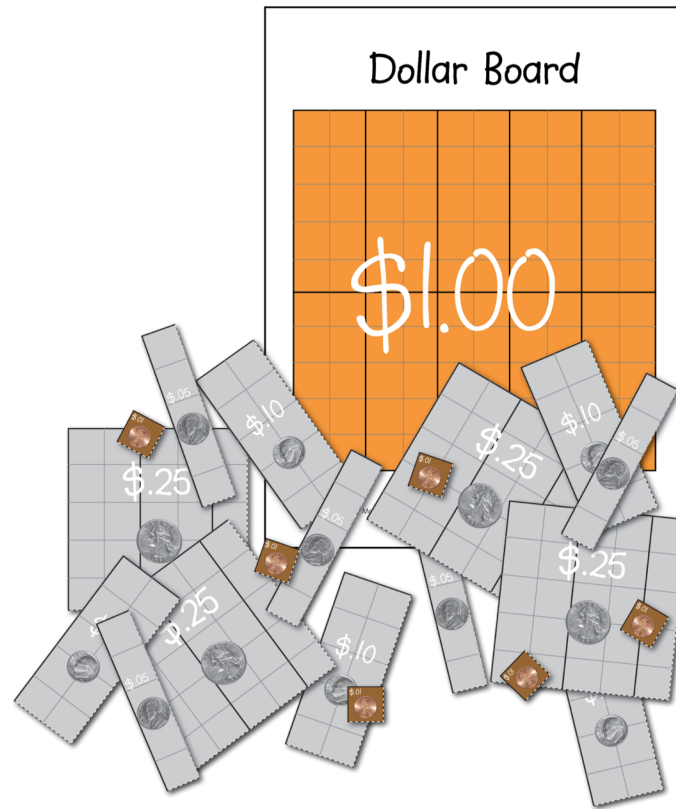
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Issue 3

CONCRETE VS. ABSTRACT

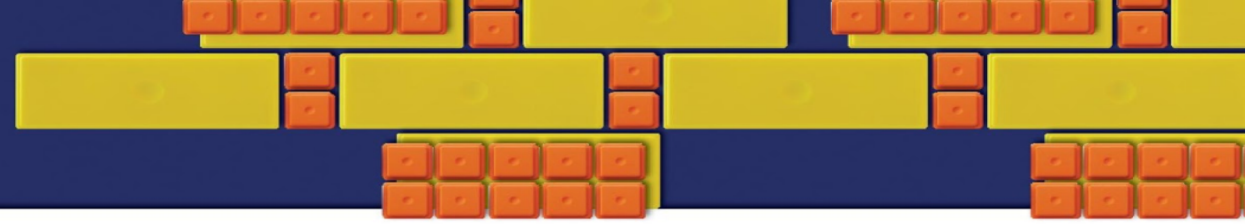
Instructional Strategy: Coin Value Cards

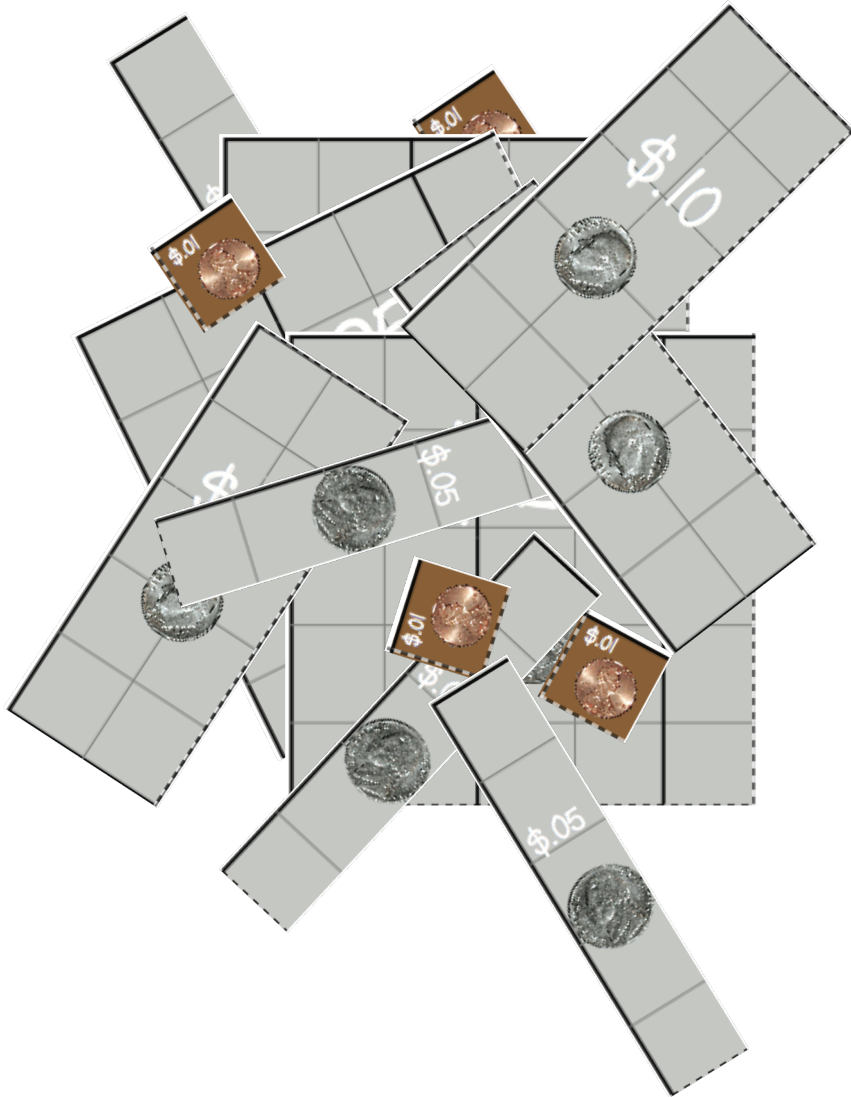


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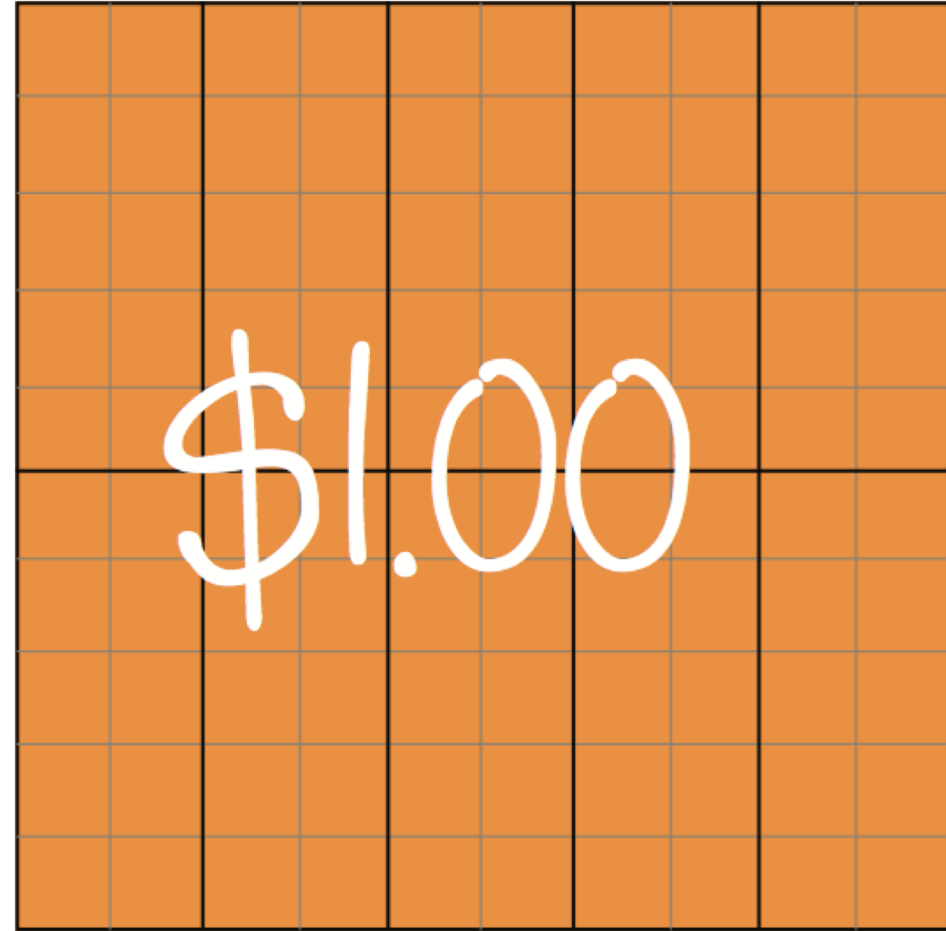


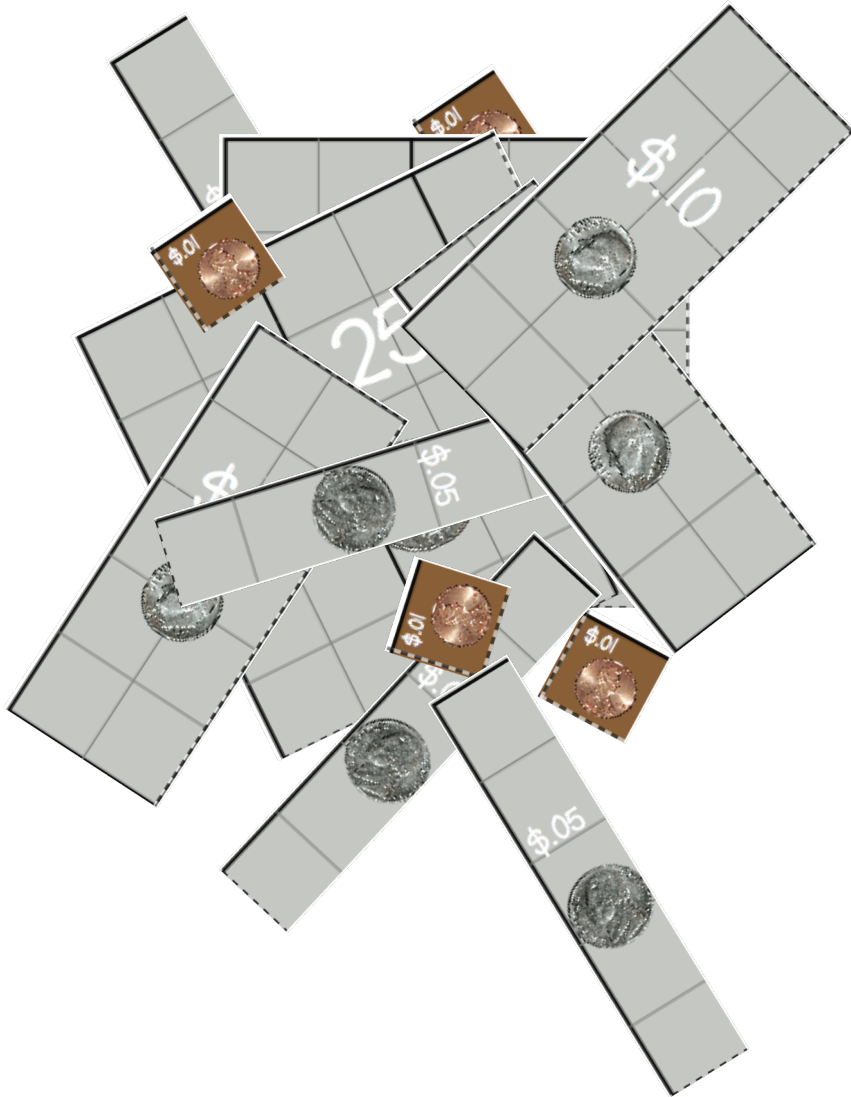
72 ¢



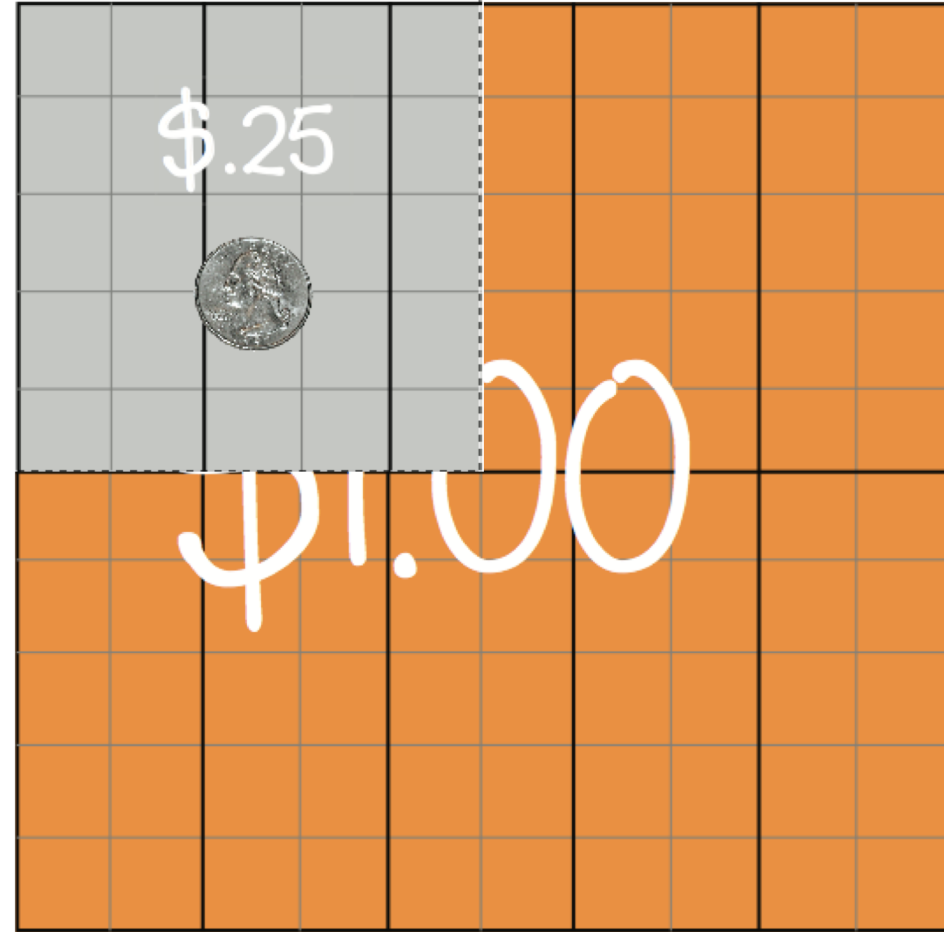


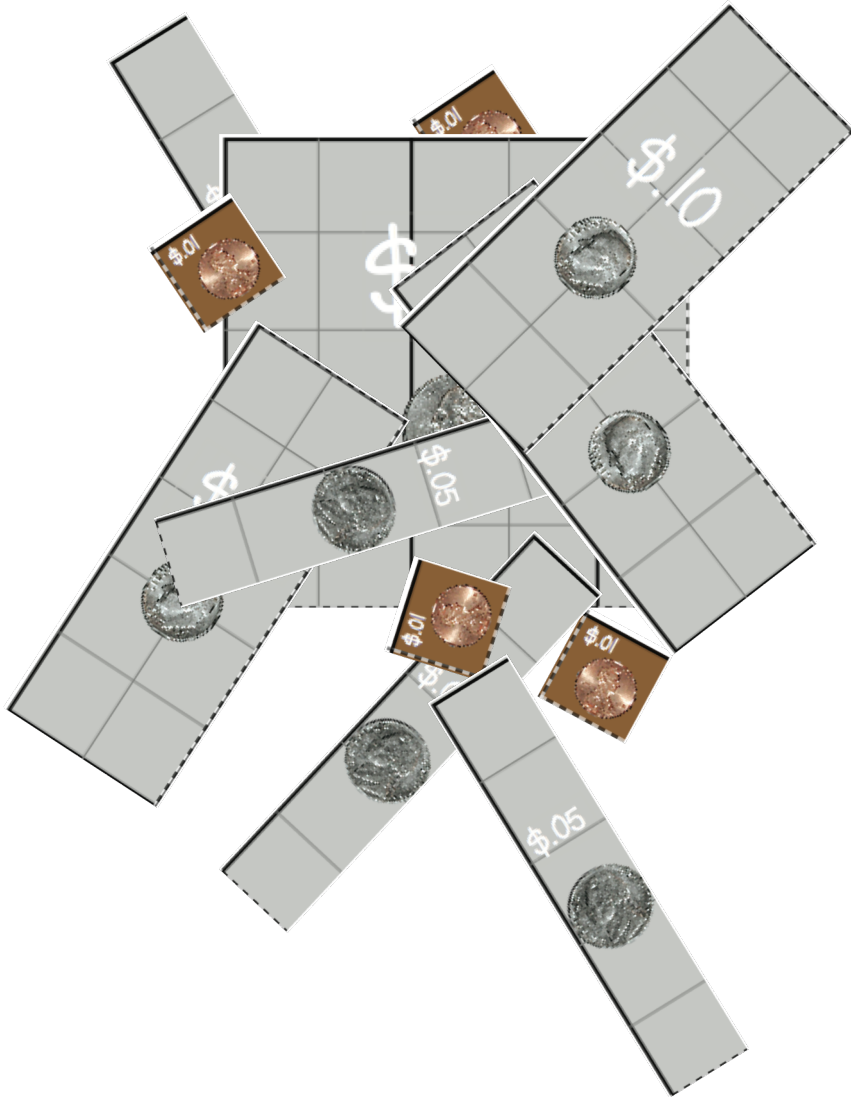
Dollar Board



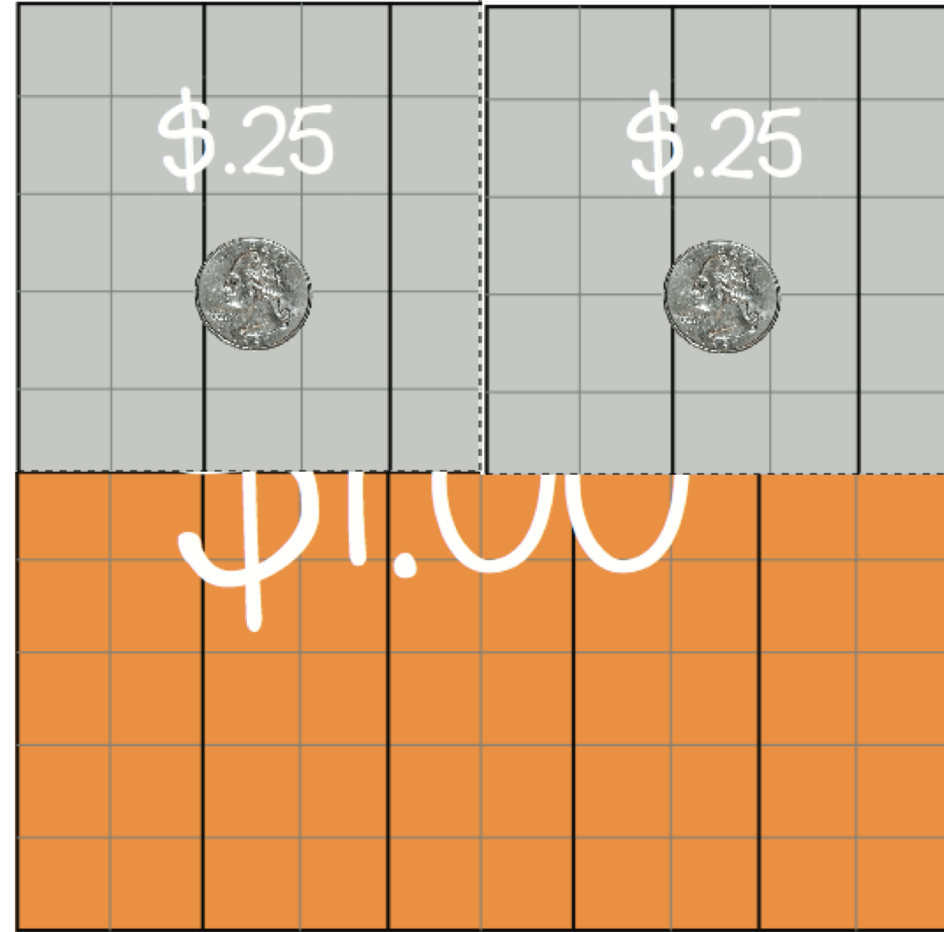


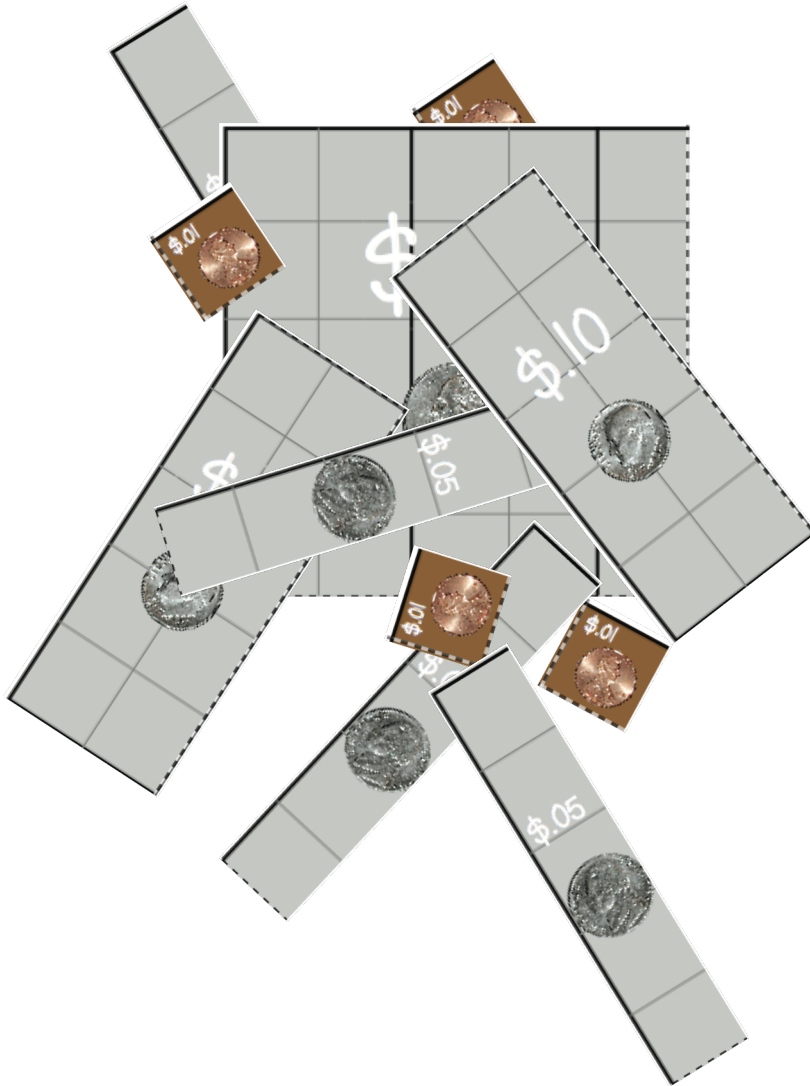
Dollar Board



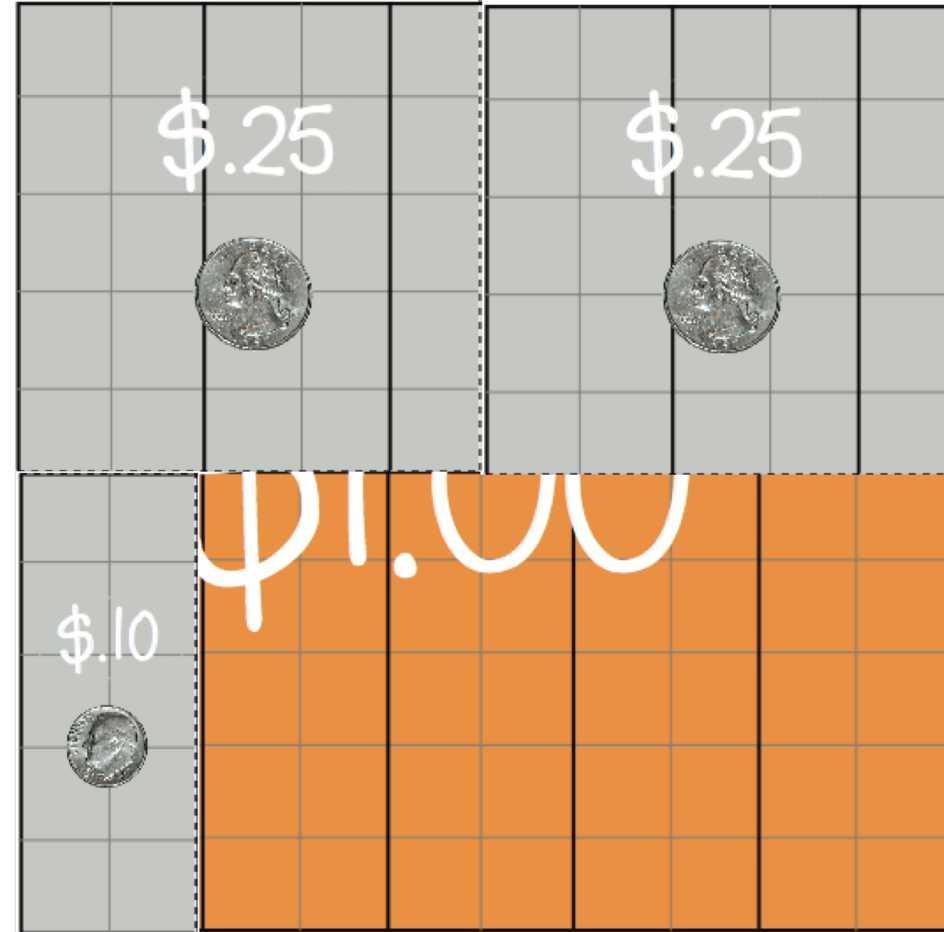


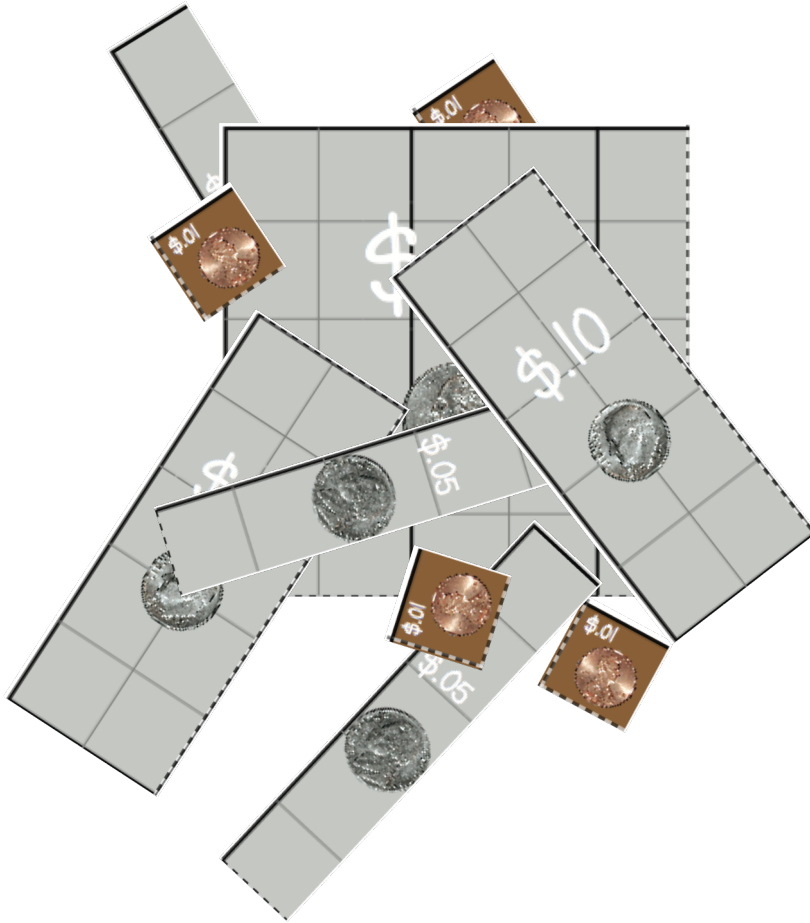
Dollar Board



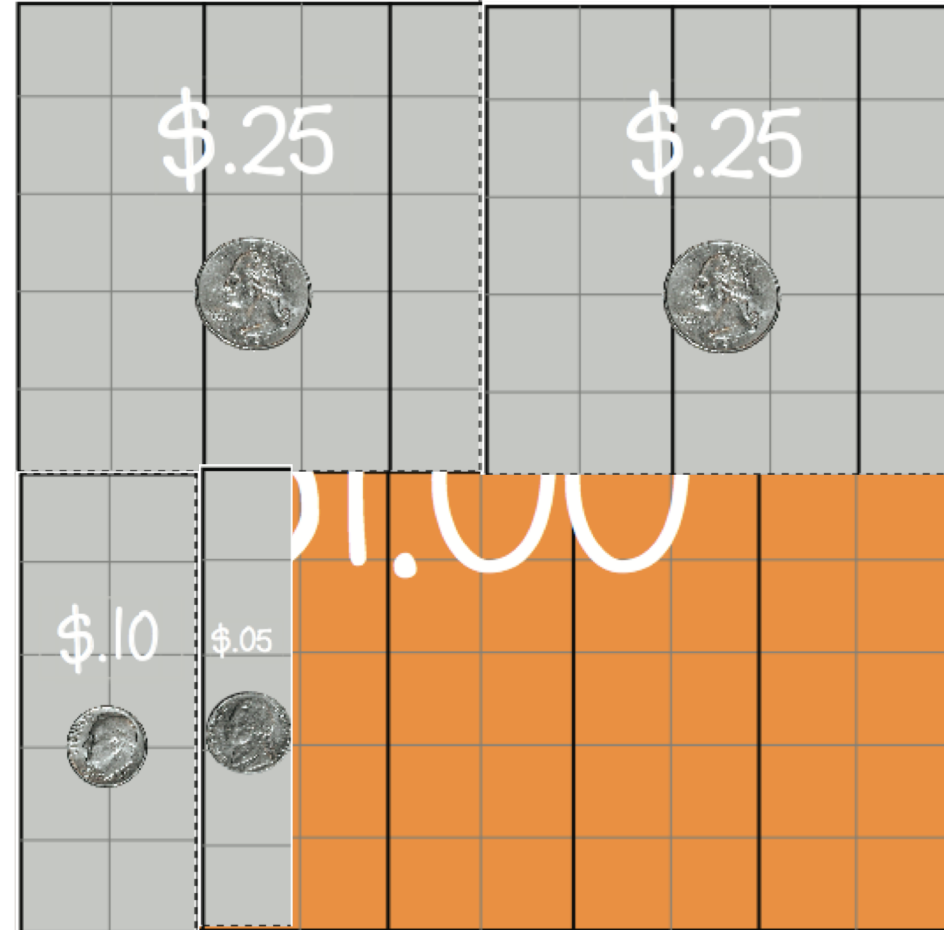


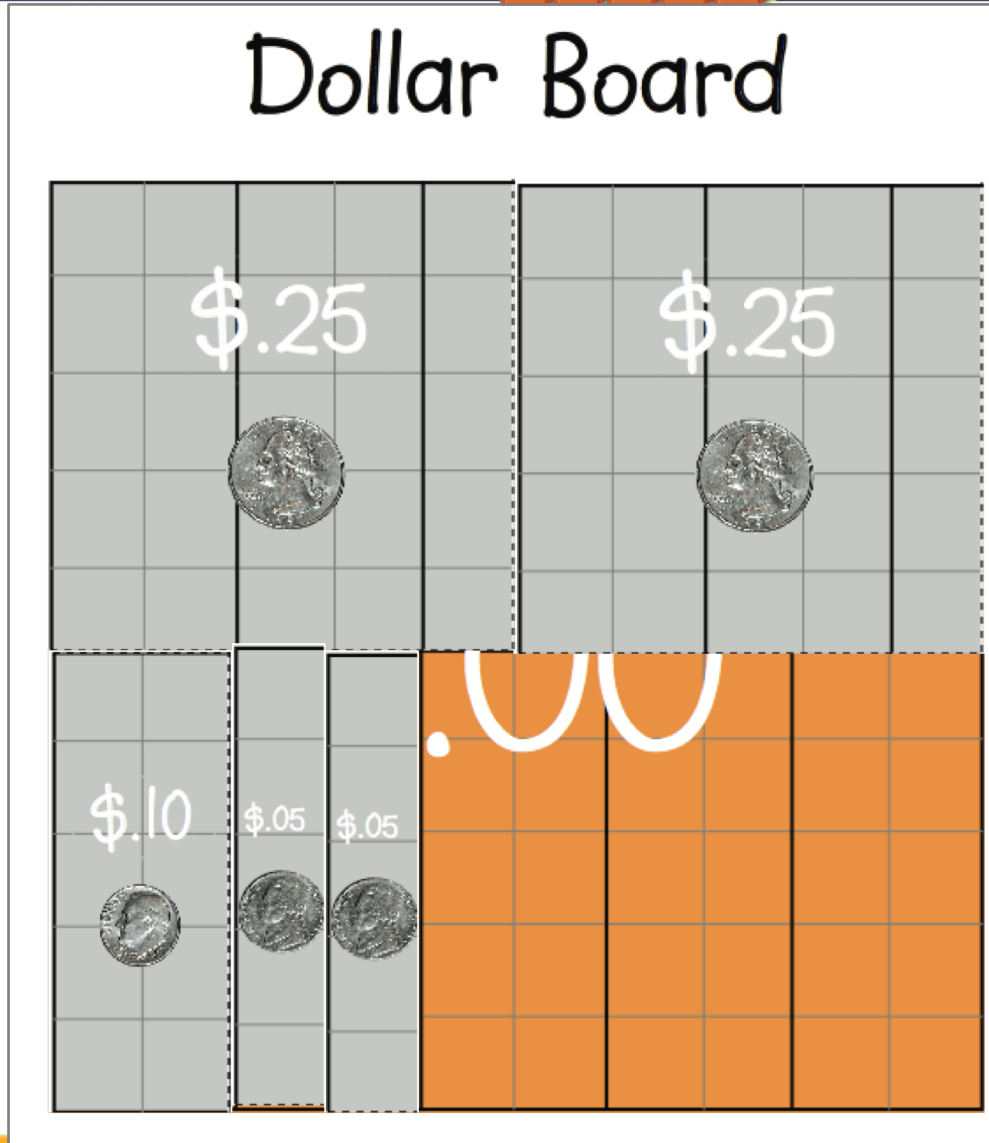
Dollar Board





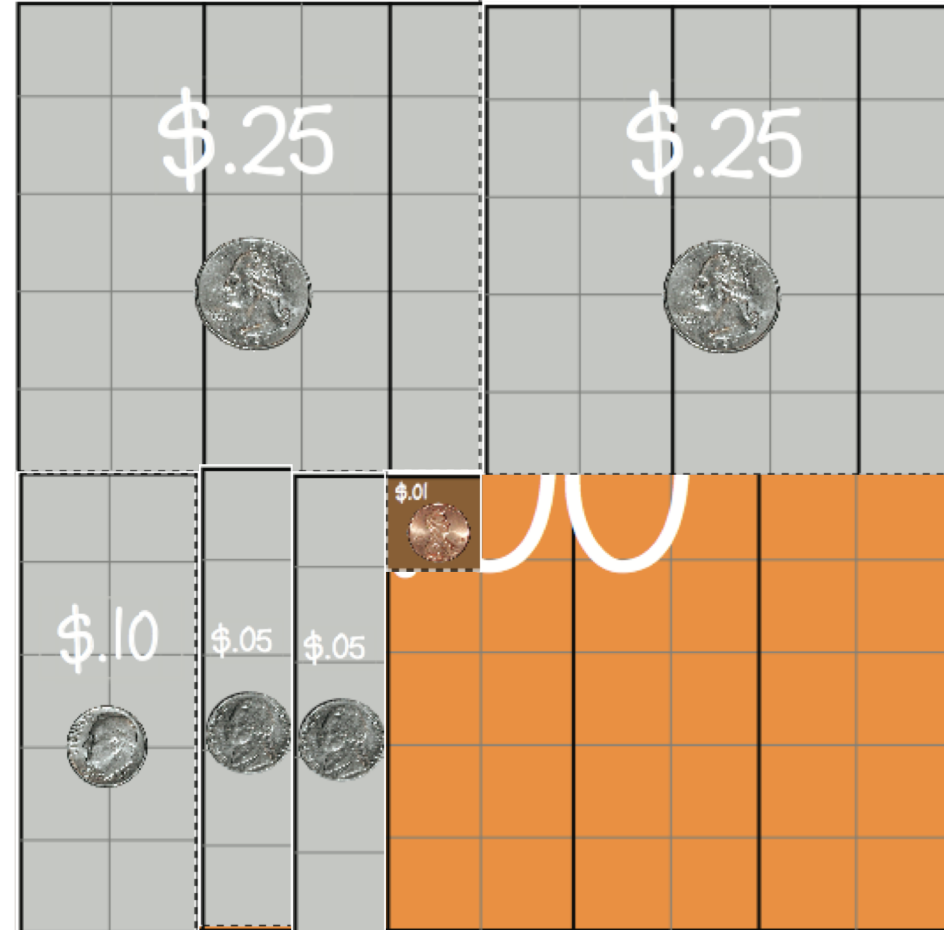
Dollar Board

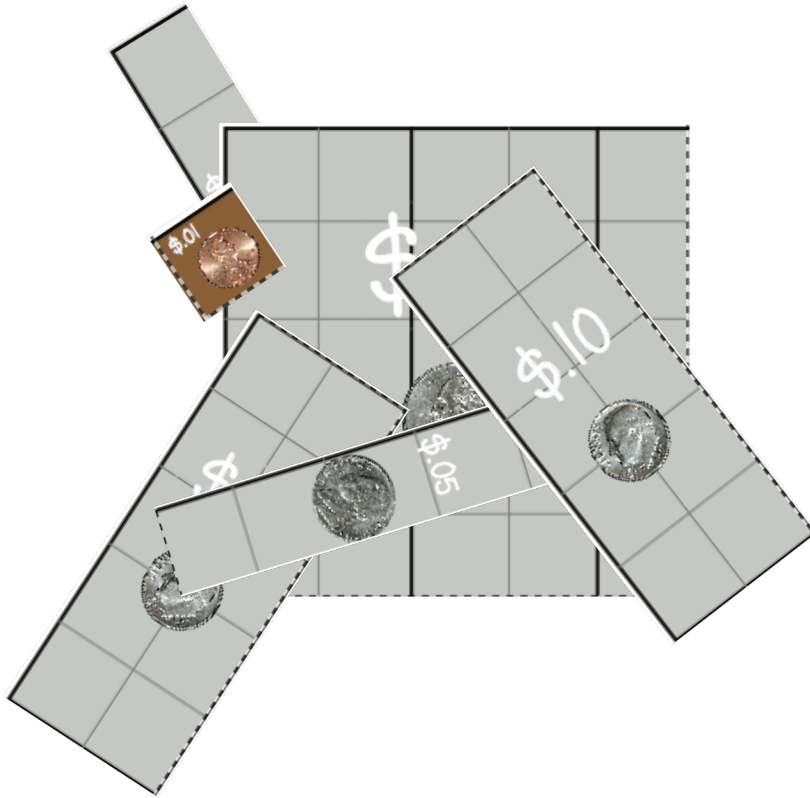




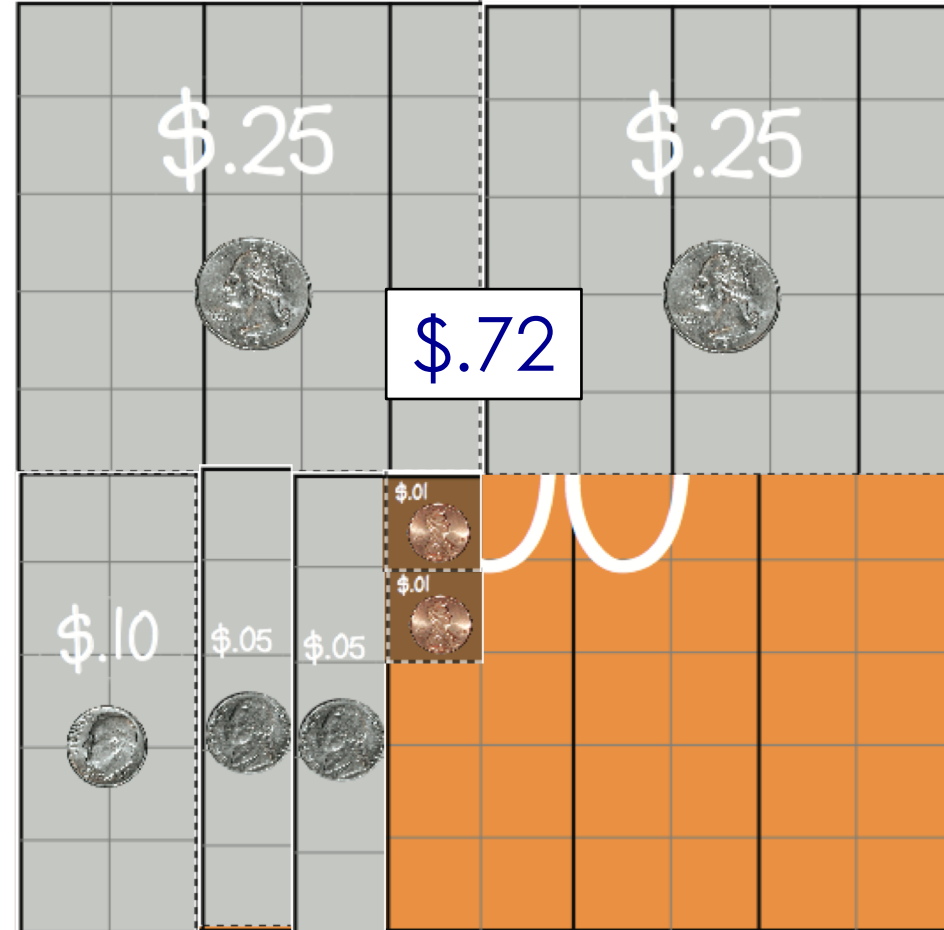


Dollar Board





Dollar Board





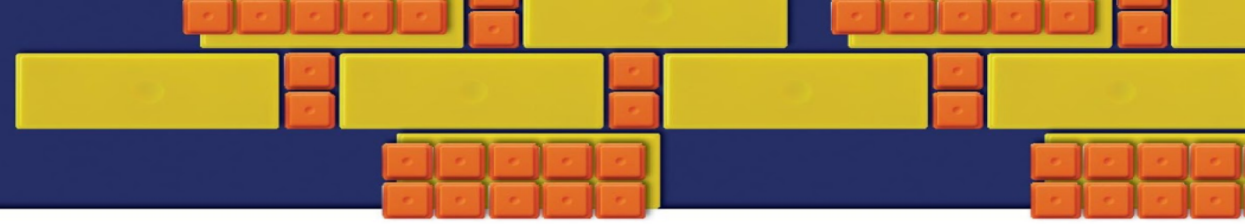
Activity: The \$1.00 Race

4 quarters
3 dimes
3 nickels
10 pennies

Money Chart - Coins

Dollars – \$1.00	Quarters – \$.25	Dimes – \$.10	Nickels – \$.05	Pennies – \$.01



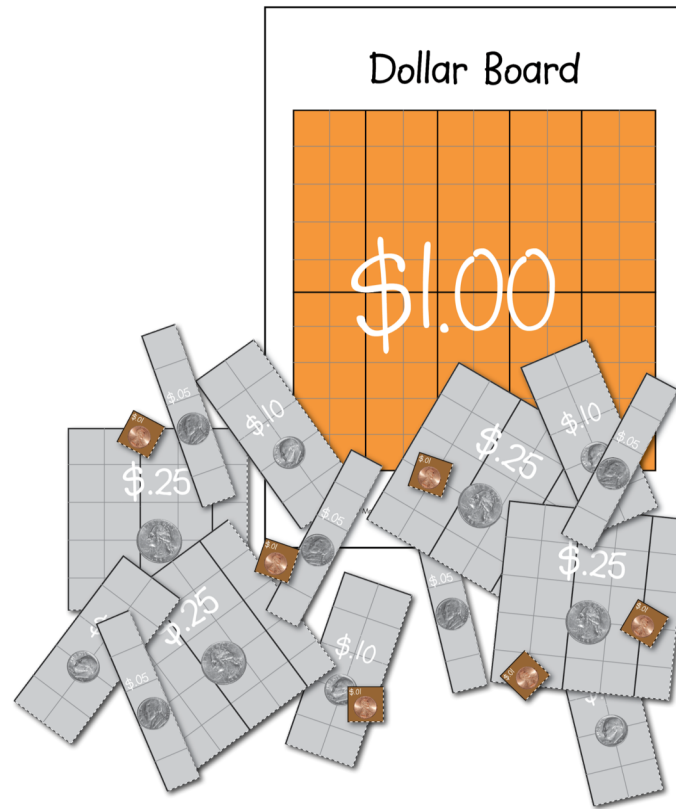


Issue 4

MAKING CHANGE



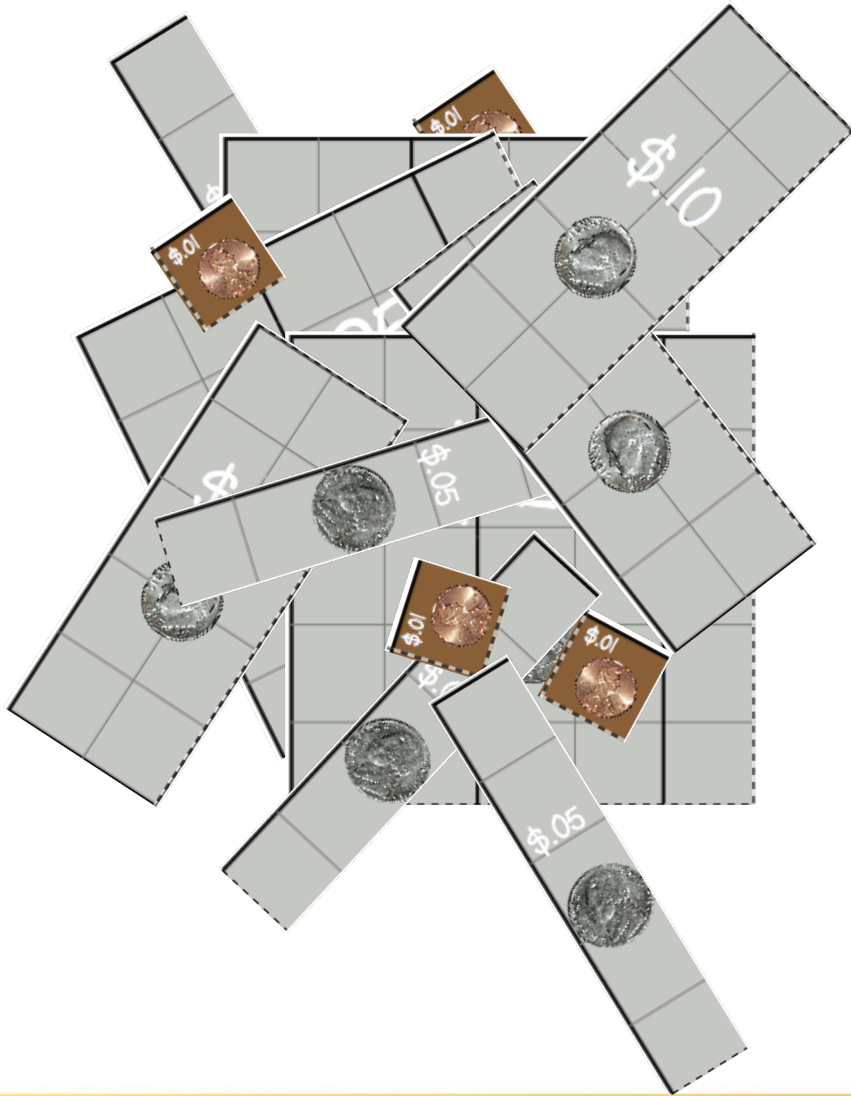
Making Change on the Dollar Board



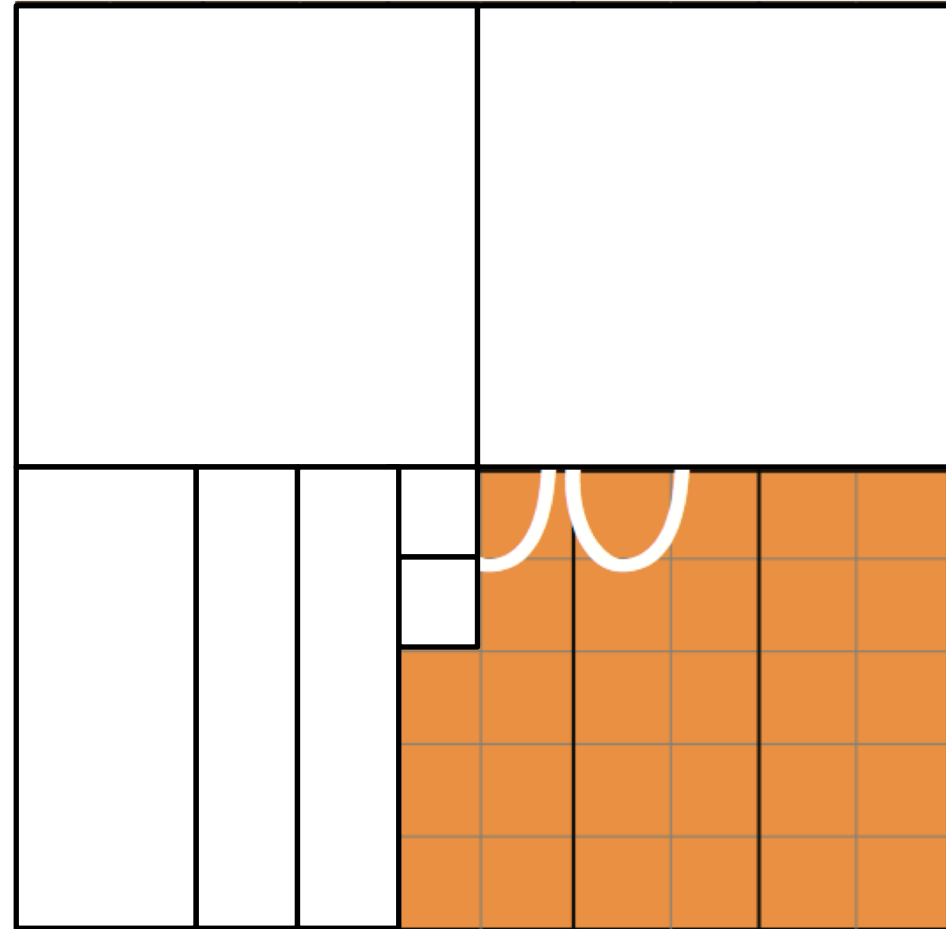
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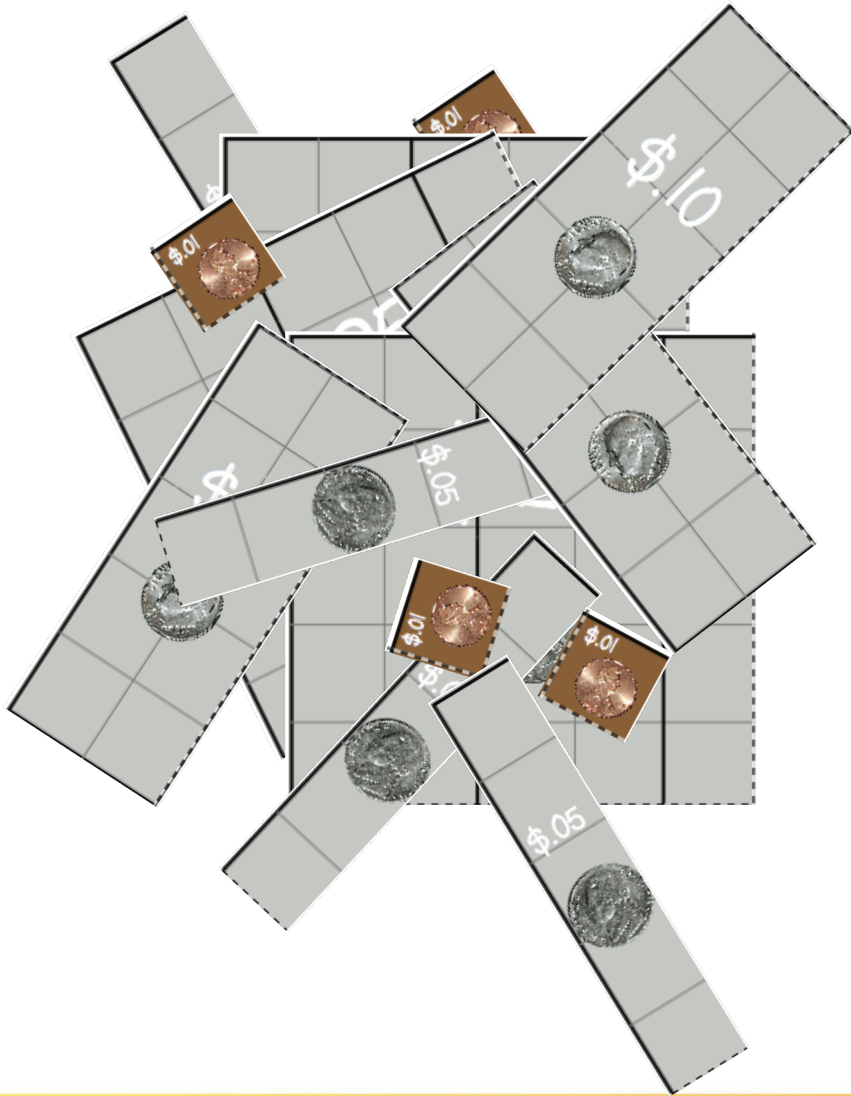


72¢

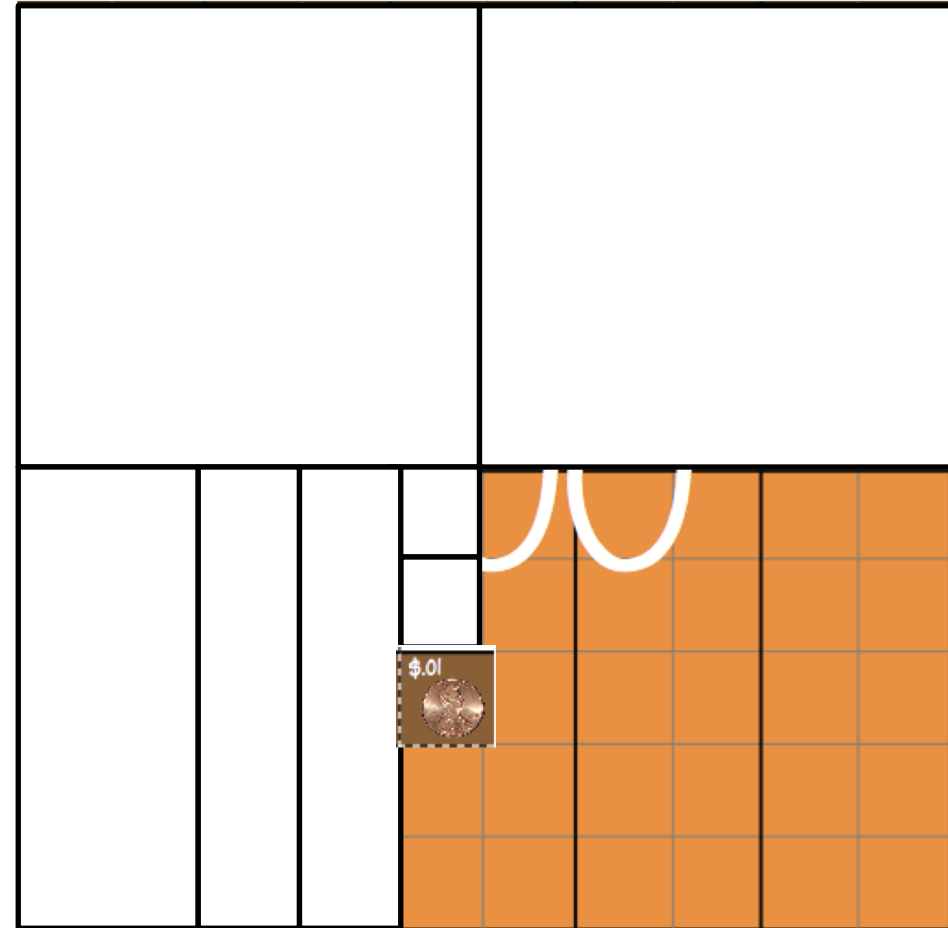


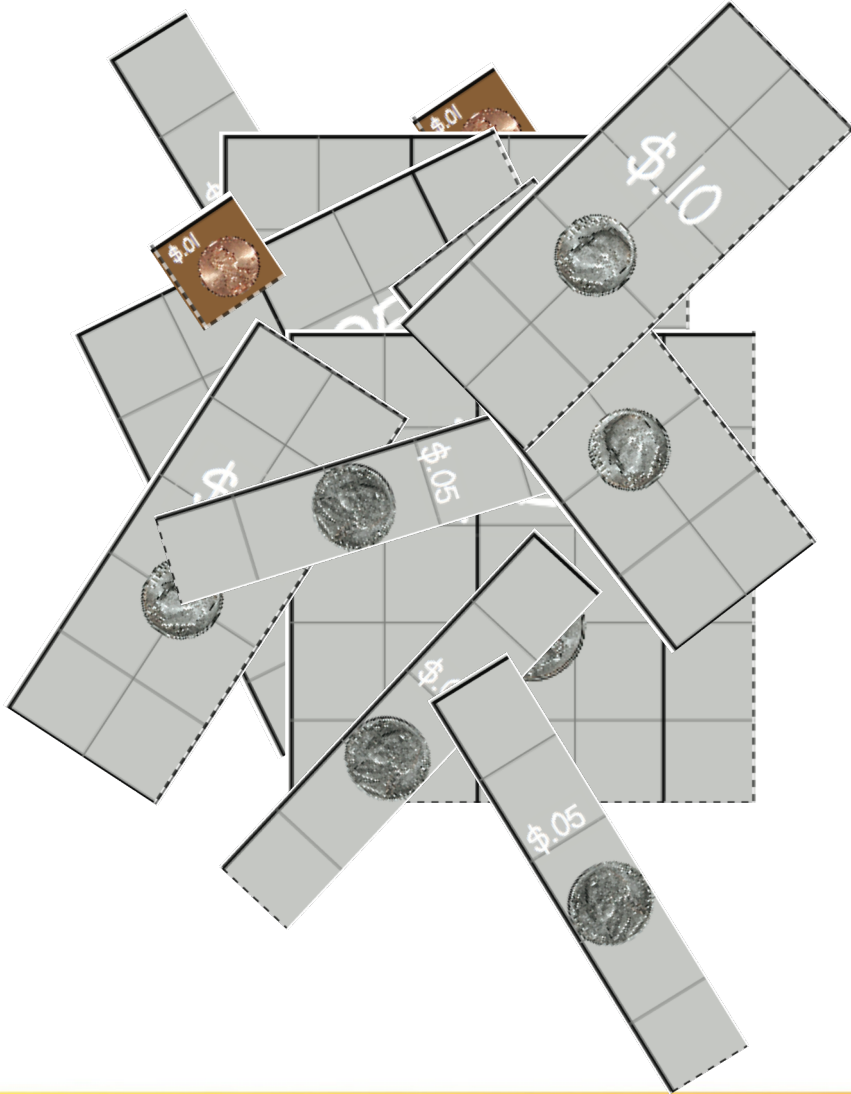
Dollar Board



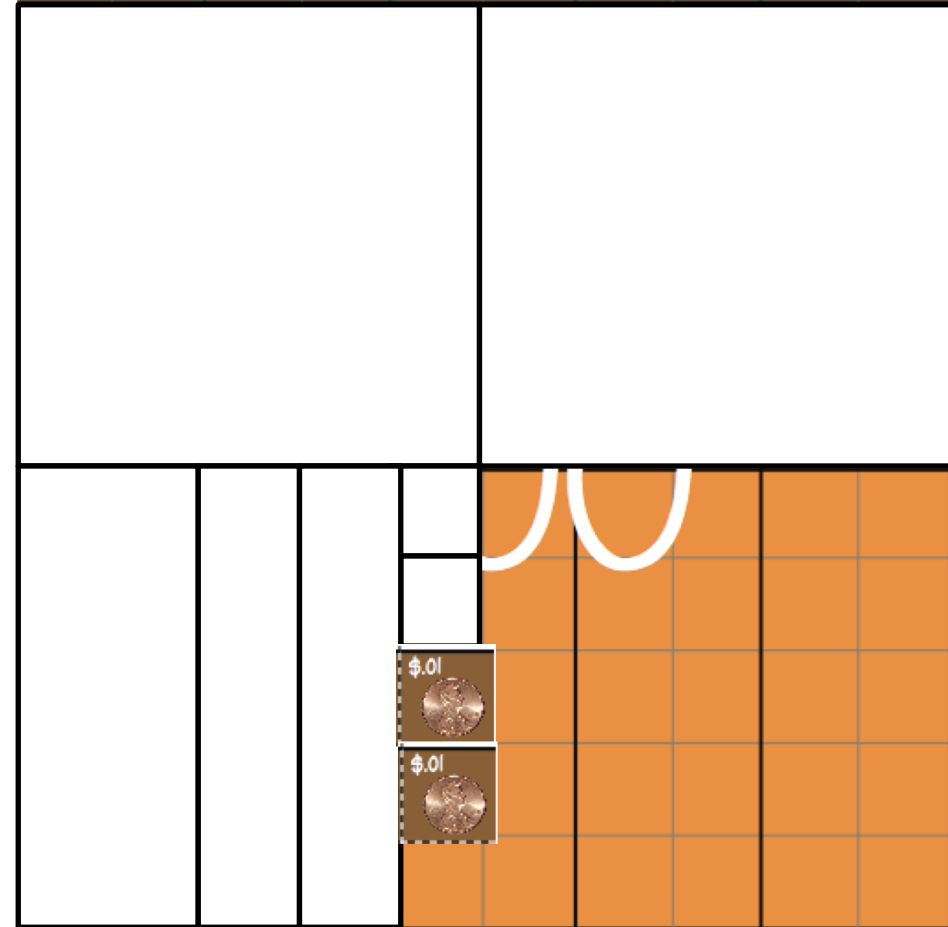


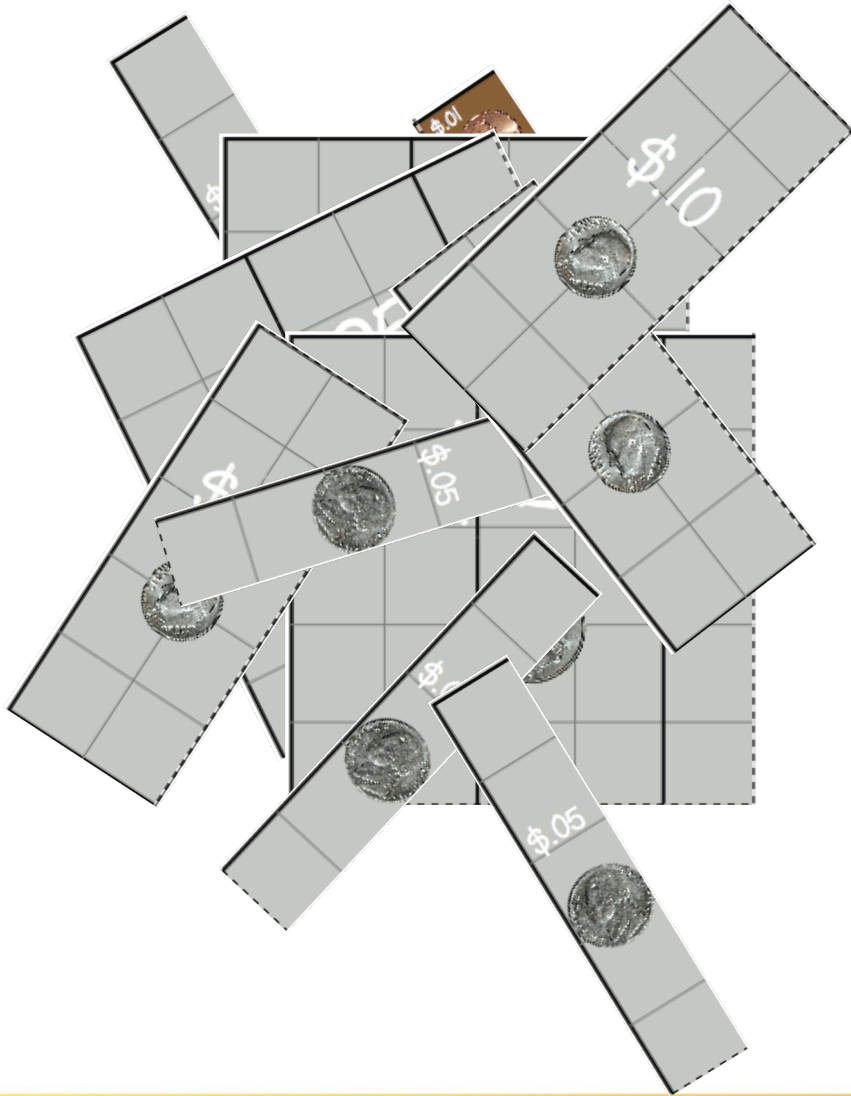
Dollar Board



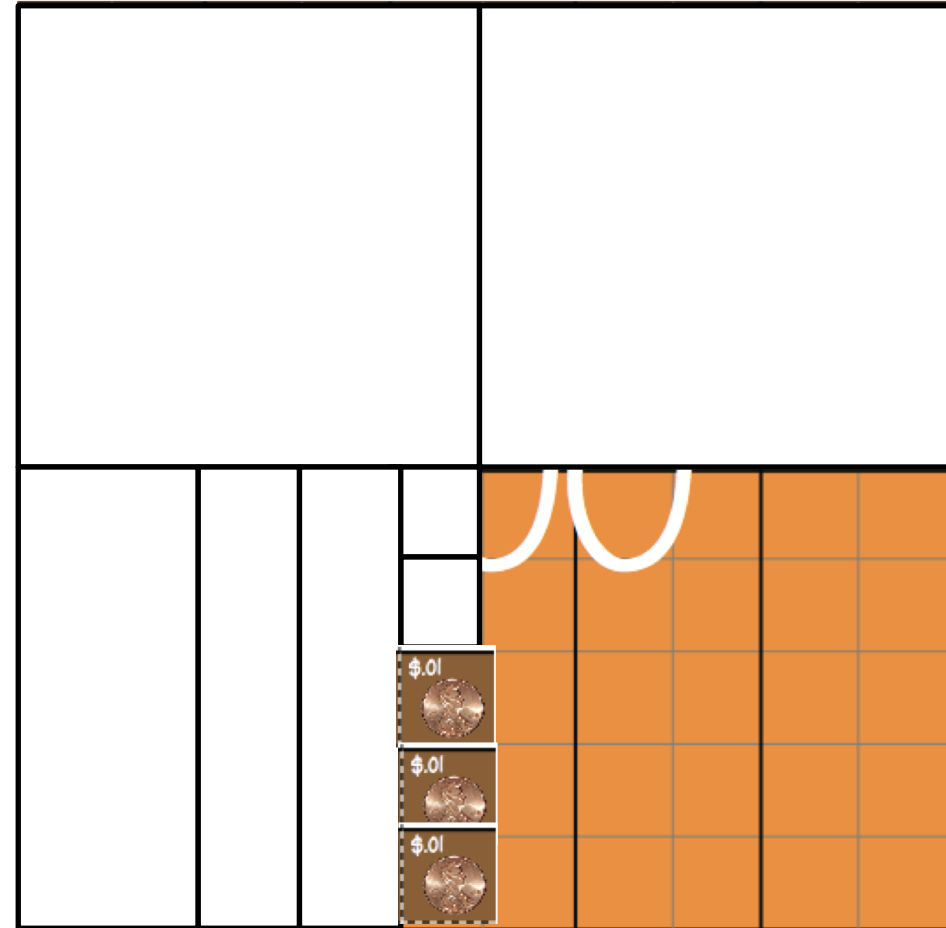


Dollar Board



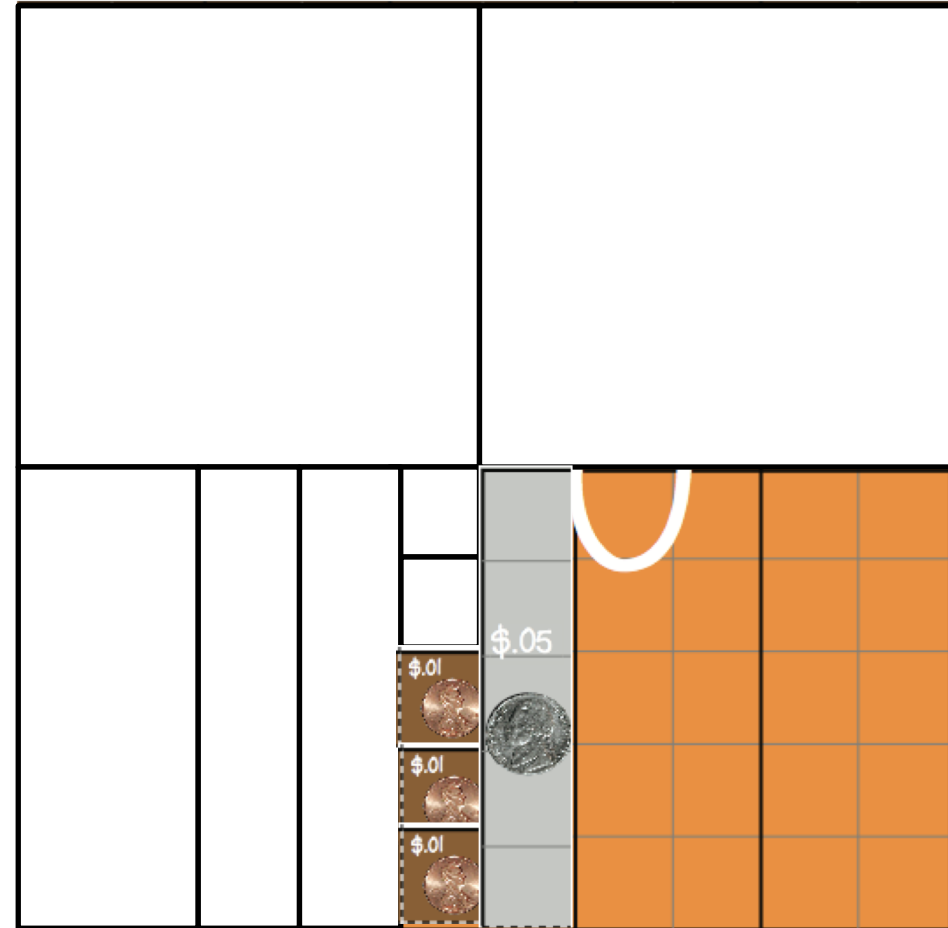


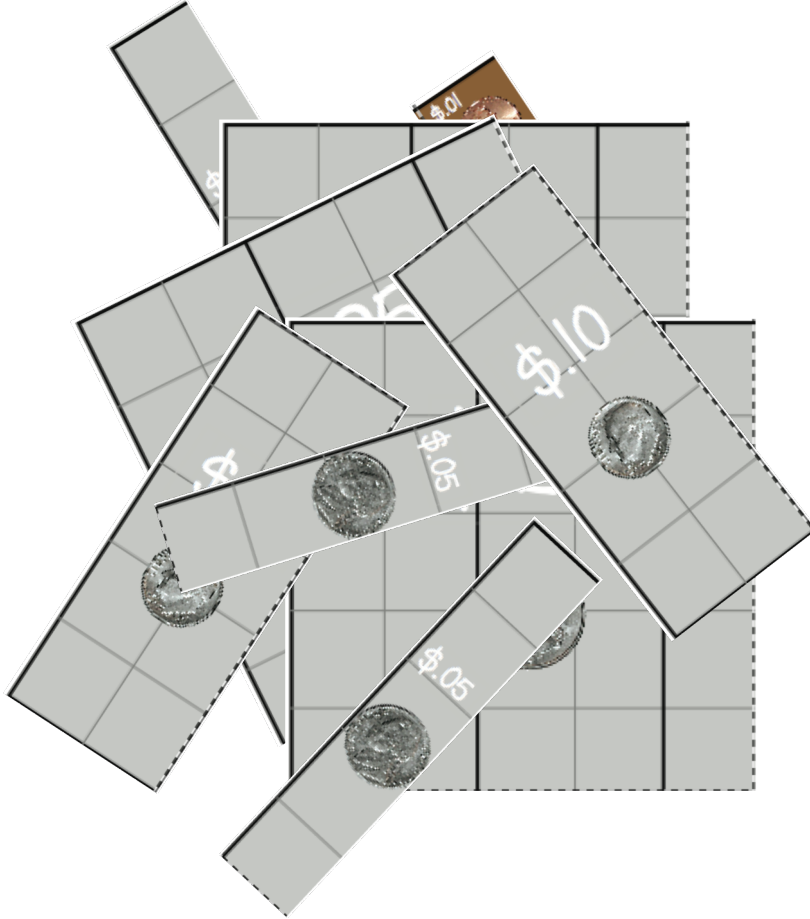
Dollar Board



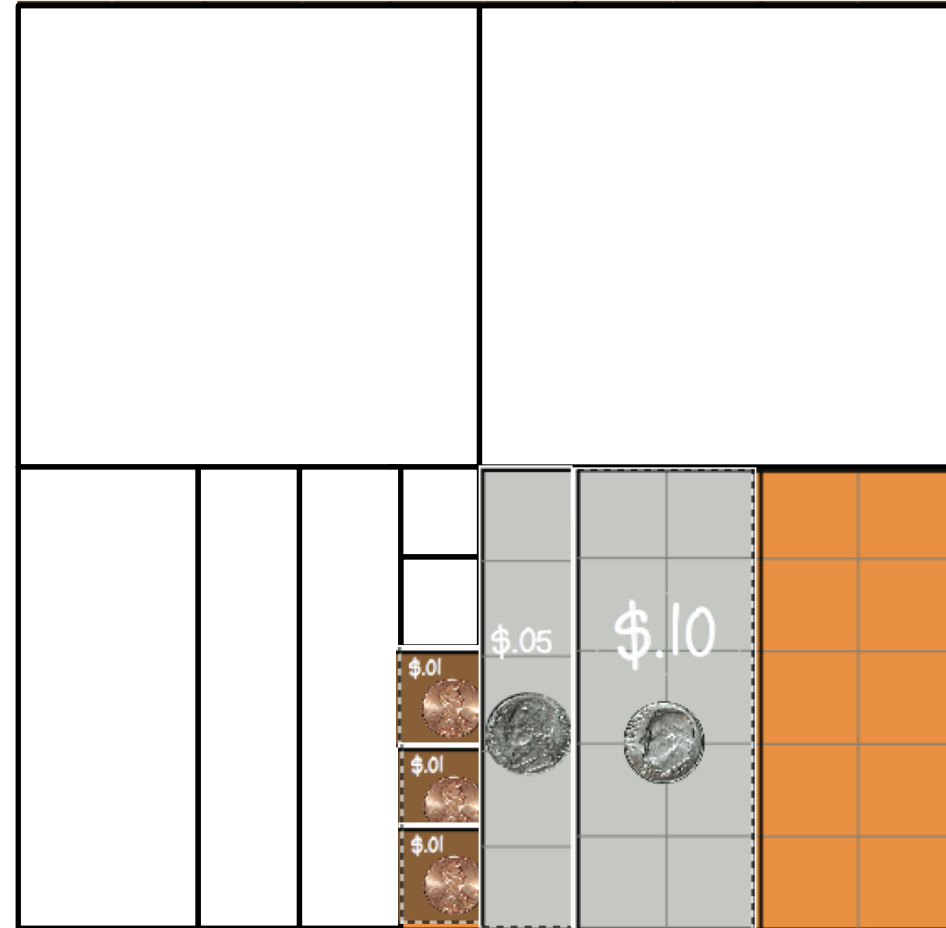


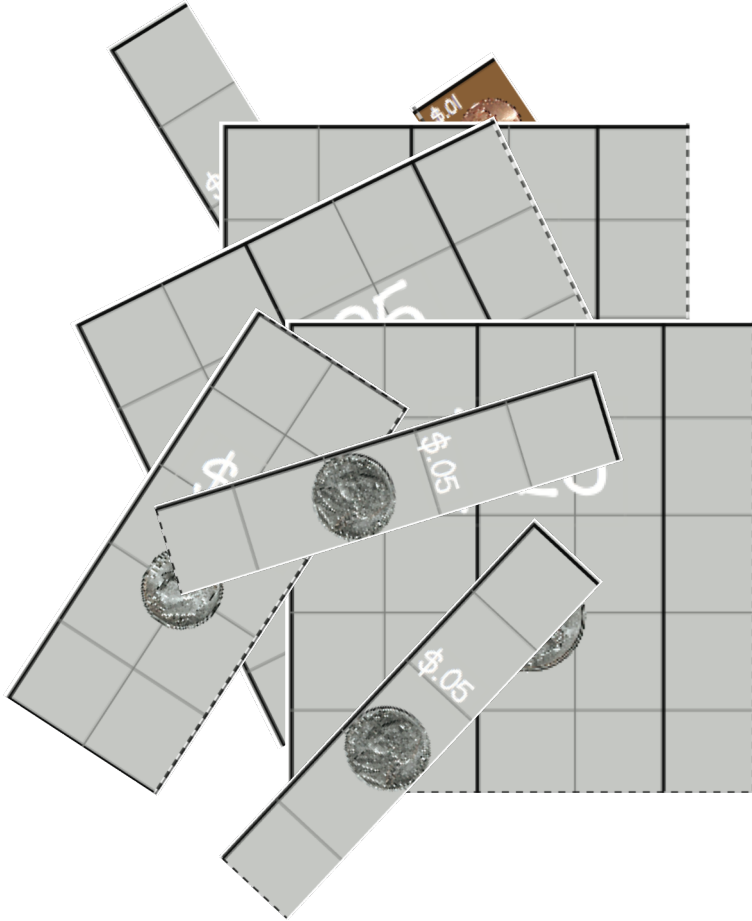
Dollar Board



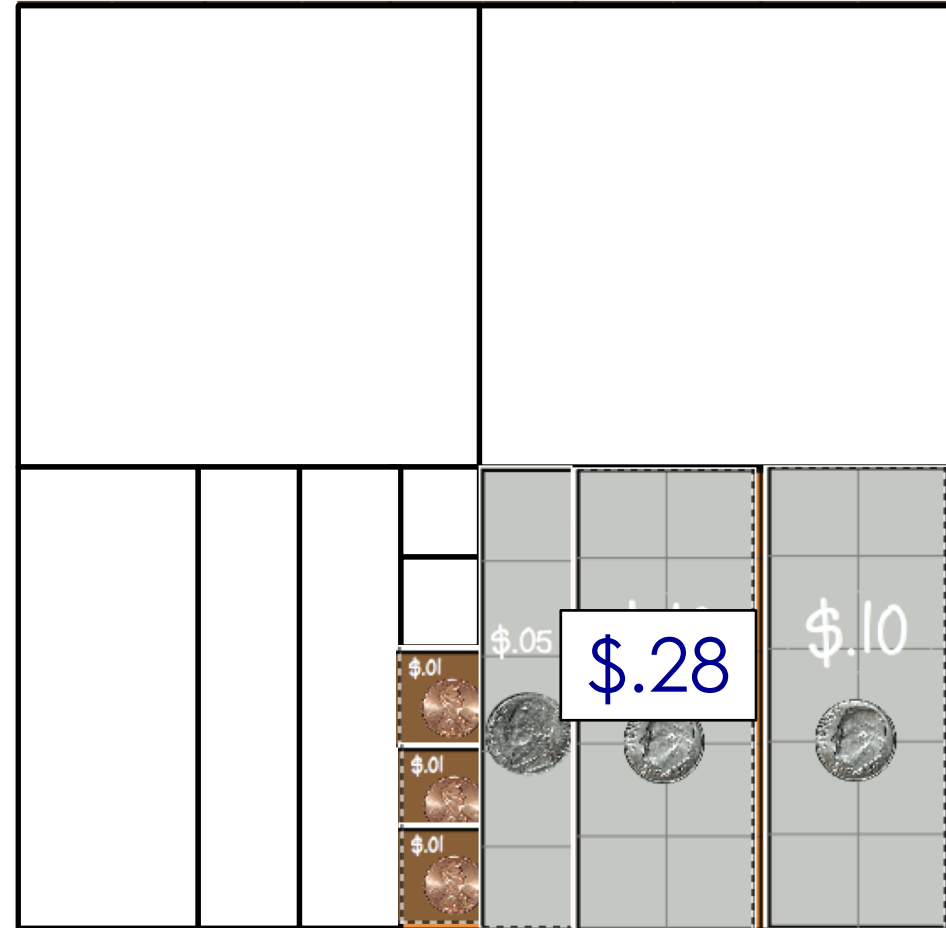


Dollar Board



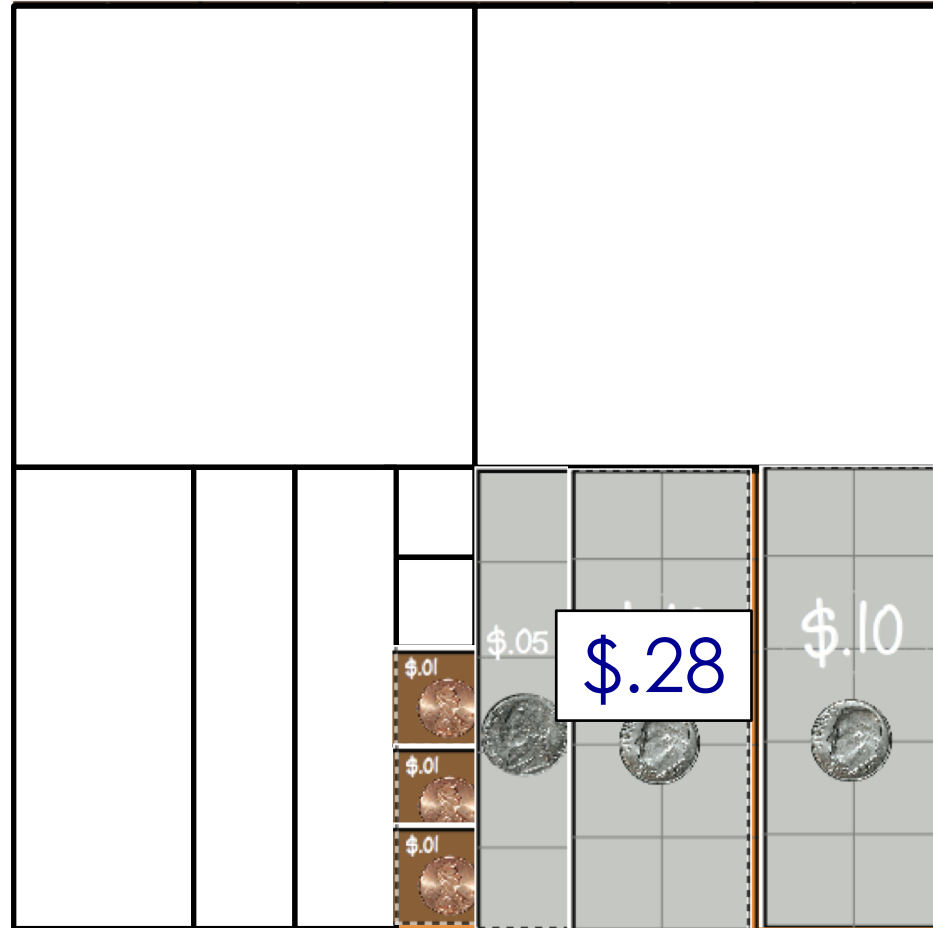


Dollar Board



They duplicate the puzzle-piece coins with play money.

Dollar Board



\$.28





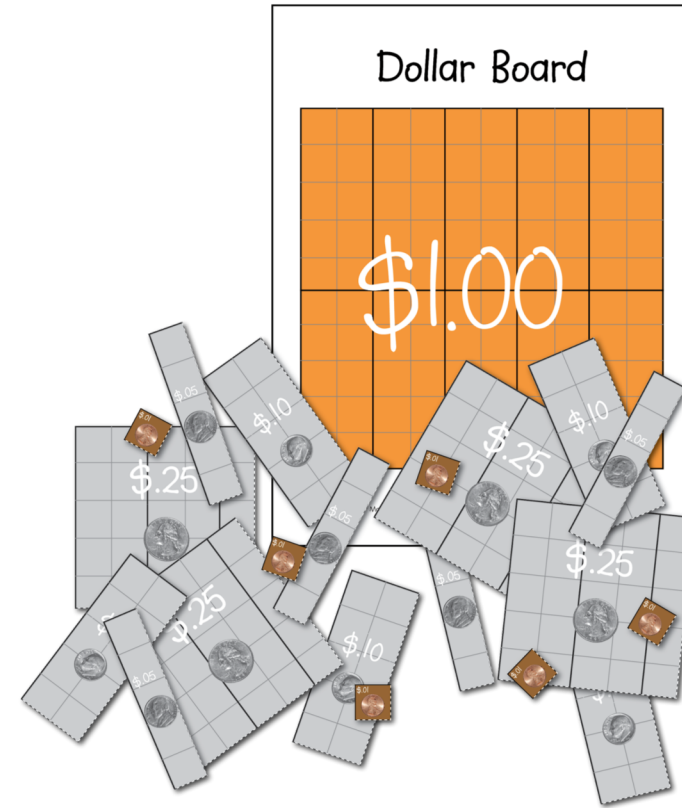
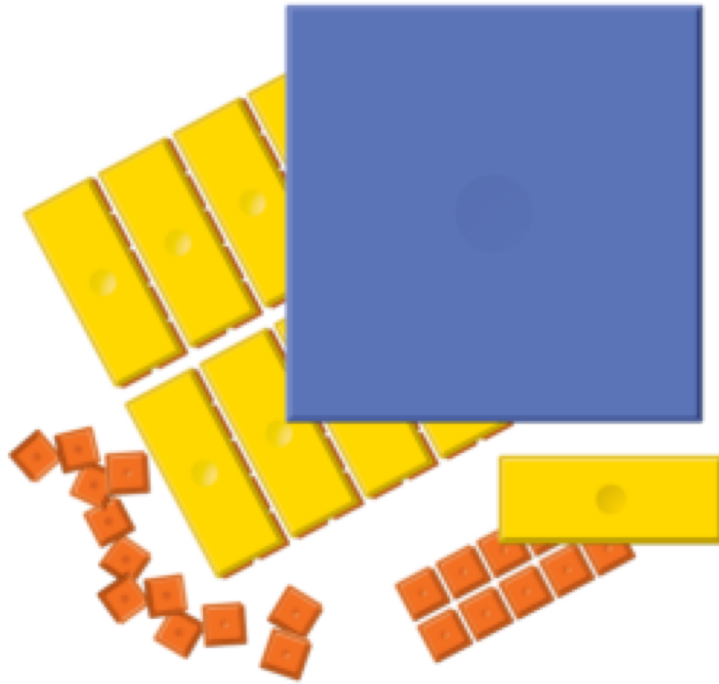
Issue 5

PROBLEM SOLVING

Money Word Problem

- Compose a just-right grade-level word problem involving money.
- How would you use the dollar board to help children solve this problem?
- If you chose mixed bills and coins, how might you use two boards?

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REFLECTION

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For PPT & HO Links: bit.ly/2CNYMSS

For more about KP Ten-Frame Tiles: www.kpmathematics.com

To continue the conversation: kim@kpmathematics.com

THANK YOU!!!