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KND 7112 122.4 NI 125.1; NI 125.2; NI 125.3 Cut arrows on the dark lines. If desired, print each place value on a different color.



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KNP # Ni 122 4; Ni 126 1; Ni 125.1; Ni 125.2, Ni 126.5

Build It, Draw It, Prove It

Materials: Arrow Cards, cut out, Base Ten Block cards, cut out, Base Ten grid paper, one sheet per player

Mix up in random order each set of arrow cards. Lay them face down.

To play Build it, Draw it, Prove it:

- 1. Partner A picks up one arrow card from each of the hundreds, tens and ones pile.
- 2. Partner A builds the three digit number using the base ten blocks.
- 3. Partner A draws the model of the three digit number on the grid paper.
- 4. Partner A draws another arrow card this time from only the ones pile. This card is your multiplier. Partner A now has a 3 digit number times a one digit number.
- 5. Partner A draws the multiplication equation on the grid paper. (245 x 3) This shows the visual model of this multiplication equation.
- 6. Partner A solves the equation.
- 7. Partner B repeats steps 1-6
- 8. One partner spins the more or less spinner.
- 9. Winner of this round is the partner who has either more or less, based on the spinner. That player gets a point.

The winner is the partner who gets 5 points first.





resources Avail

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Reproducible 4. Base-Ten Blocks



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Problem Card Set A	Base Ten Card Set B	Area Model Card Set C	Distributive Property Card Set D	Partial Products Card Set E
Each pack of baseball cards has fifteen cards. How many cards are in twenty- two packs?		20 2 10 5	$(20 + 2) \times (10 + 5) =$ 20 × 10 + 2 × 10 + 20 × 5 + 2 × 5 =	15 <u>X 22</u> 10 20 100 <u>200</u>
How many eggs are in twelve dozen?		10 2 10 2	$(10+2) \times (10+2) =$ $10 \times 10 + 2 \times 10 + 10 \times 2 + 2 \times 2 =$	12 <u>X 12</u> 4 20 20 100
The boy scouts traveled a distance of twenty-three feet in their boat. The girl scouts traveled eleven times farther than the boy scouts? How far did the girls travel?		10 1 20 3	$(20+3) \times (10+1) =$ 20 × 10 + 3 × 10 + 20 × 1 + 3 × 1 =	11 <u>X 23</u> 30 20 200
The tree house Scott is building needs twenty- six boards and each board needs seventeen nails. How many nails does Scott need to buy?		20 6 10 7	$(10 + 7) \times (20 + 6) =$ $10 \times 20 + 7 \times 20 + 10 \times 6 + 7 \times 6 =$	26 <u>X 17</u> 42 140 60 200
An opossum sleeps an average of nineteen hours per day. How many hours does it sleep in a 2-week time period?		10 4 10 5	$(10+9) \times (10+4) =$ $10 \times 10 + 9 \times 10 + 10 \times 4 + 9 \times 4 =$	14 <u>X 19</u> <u>36</u> 90 40 <u>100</u>
Cam bought thirteen different colored folders and each had twenty-eight dots. How many total dots are on her folders?		8	$(20+8) \times (10+3) =$ 20 × 10 + 8 × 10 + 20 × 3 + $\frac{8}{5} =$	13 <u>X 28</u> 24 80 60 <u>200</u>

Problem Card Set A	Base Ten Card Set B	Area Model Card Set C	Distributive Property Card Set D	Partial Products Card Set E
Bags of Reese's cups have twenty- one individually wrapped peanut butter cups. How many cups are in twenty-five bags?		20 5	$(20+5) \times (20+1) =$ 20 × 20 + 5 × 20 + 20 × 1 + 5 × 1 =	21 <u>X 25</u> 5 100 20 400
The zoo has fifteen monkeys who eat fifteen bananas each day. How many bananas do they need each day for the monkeys?		10 5	$(10 + 5) \times (10 + 5) =$ $10 \times 10 + 5 \times 10 + 10 \times 5 + 5 \times 5 =$	15 <u>X 15</u> 25 50 50 <u>100</u>

Begin with Card Sets A, B, and C–Word problem, base ten model, and area model.

Match a word problem card with both a base ten model and area model card.

Each time you do this, explain your thinking clearly and carefully.

(Try not to make suggestions that move students towards a particular approach to this task. Instead, ask questions to help students clarify their thinking.)

Students will correct their own errors once the Partial Product cards are added. For students struggling to get started: There is more than one way to tackle this task. Can you think what one of them might be? [focusing on either the base ten strategy or the area model.] What is the story problem asking you to find? What information is there? Is there any information missing? What do you already know? How can you calculate products with the base ten model? With the area model?

As students finish placing the word problems, base ten models, and area model cards, hand out Card Sets D, E: Distributive Property and Partial Products These provide students with different ways of interpreting the situation. Do not collect the card sets they have been using. An important part of this task is for students to make connections between all the different representations of multiplication problems. As you monitor the work, listen to the discussion and help students to look for patterns and generalizations. Pairs should have 8 different clusters of cards with 6 cards in each. The original cards show the correct matches on each row of the table as they are originally arranged.

Nice and Easy

Focus:

Use the doubling-and-halving strategy to multiply

Materials:

Each pair will need: *Nice and Easy* game board, *Nice and Easy Too* game board, one cube labeled: 15, 15, 25, 35, 45, 45 and another Cube labeled: 6, 8, 12, 14, 16, 18

Each player will need: ten counters (a different color for each player) (Coins, beans, buttons may be used from home)

Directions:

The winner is the first player to arrange three counters adjacently in a horizontal, vertical, or diagonal line.

How to Play:

Player 1 roll the cubes. Say aloud the multiplication sentence represented by the number cubes, then double one factor and half the other to figure out the equivalent multiplication sentence. Place a counter on the matching multiplication sentence on the *Nice and Easy* game board. Calculate and say the product and place a counter on the corresponding product on the *Nice and Easy Too* game board. If your sentence is not available, then you lose a turn.

The other player has a turn.

The first player to make a line of three adjacent counters is the winner.

Example:

Lincoln rolls 35 and 16, and says: 35 multiplied by 16 is the same as 70 multiplied by 8. The answer is 560. He claims 70 x 8 on the game board.

REINFORCE: Double and Halve

90 × 3	90 × 4	90 × 6	90 × 7	90 × 8	90 × 9
70 × 3	70 × 4	70 × 6	70 × 7	70 × 8	70 × 9
50 × 3	50 × 4	50 × 6	50 × 7	50 × 8	50 × 9
30 × 3	30 × 4	30 × 6	30 × 7	30 × 8	30 × 9

Nice and Easy

Cube A: 15, 15, 25, 35, 45, 45

Cube B:

6, 8, 12, 14, 16, 18

Burnett, J. & Tickle, B. (2007). Fundamentals: Red Level, page 22. ORIGO Education.

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PRACTICE: Double and Halve

270	360	540	630	720	810
210	280	420	490	560	630
150	200	300	350	400	450
06	120	180	210	240	270

Nice and Easy Too!

Burnett, J. & Tickle, B. (2007). Fundamentals: Red Level, page 23. ORIGO Education.



Base-ten grid paper—18

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Base-ten grid paper—18