

# Lesson Printables

Be a rockstar and only print what you need!



**Planners: 2-3**

## **Rules**

Sunlight: 4  
Twilight: 5  
Midnight: 6

## **Extras**

Recording Logs: 7  
Thinking Steps: 8

*\*Printing in the US? Scale to 'fit to printable area' in order to get the best print.*

## LESSON 1: Multiplication/Division - Multiplying multiples of 10 and 100

Starter	Main Activity and Input: Breaking down numbers into easier number sentences to multiply.	Plenary
<p><b>Tricky Tic Tac Toe:</b> Can students use the cards and any of the 4 operations to try and make 3 numbers in a row?</p> <p><b>To support:</b></p> <ol style="list-style-type: none"><li>1. Students could try to make any number, rather than 3 in a row.</li><li>2. Help students with an example like 36. Ask them if they see two cards that can be multiplied together to get close to 36. (5 and 7.)</li></ol> <p>Is it possible to use another number and make 36? (Use the ace.)</p> <p><b>To challenge:</b></p> <ol style="list-style-type: none"><li>1. Can students make ALL of the numbers? See the solution slide.</li></ol>	<p><b>Input:</b></p> <ol style="list-style-type: none"><li>1. Slide 6 asks students how they would solve <math>3 \times 40</math>. Ask students to come to the board to show their thinking. Do any students add 40 three times? How many different strategies can they come up with?</li><li>2. Slide 7 models how you can break 40 into a more manageable number sentence to solve. 40 can become <math>4 \times 10</math>. This is called <i>the distributive property of multiplication</i>. We don't explicitly go into this but you might wish to discuss it with your class.</li><li>3. Slide 8 asks students to practise breaking numbers into number sentences and solving a multiplication problem. Ask students to come to the board to share their thinking. This slide is animated to show possible thinking steps.</li><li>4. Slide 9 asks students how they might apply their understanding to multiply 3 by 400. Elicit from students that 400 could be written as <math>4 \times 100</math> or even <math>4 \times 10 \times 10</math>. This means the number sentence could look like this: <math>3 \times 4 \times 100</math> or <math>3 \times 4 \times 10 \times 10</math>. Slide 9 is animated to show possible thinking steps.</li><li>5. Slides 10 to 18 model how to use this strategy to play Trophy Target.<ul style="list-style-type: none"><li>- Each player is aiming to reach the target number without going over it. We have called this 'going overboard'.</li><li>- Players take turns rolling dice.</li><li>- They can choose to multiply their number by 20 or 200, 30 or 300, 40 or 400 or 50 or 500. (These numbers change depending on the learning zone.)</li><li>- The product is the number of points they score for that round. After each round, add your points together.</li><li>- Each player must have 4 turns. They need to try to get as close to the target number as possible without going over the target. This means they can't reach the target number on their 2nd turn because they will have 2 more turns and therefore will definitely go overboard.</li><li>- The closest player earns 1 point. The player who wins 3 points (or whatever amount you choose) is the winner.</li></ul></li></ol> <p><b>Activity: Play Trophy Target.</b></p> <ol style="list-style-type: none"><li>1. Print the rules for each learning zone. Students will also need dice. Students could play this game in groups of 2 or 3 or team up in pairs of 2.</li></ol> <p><b>To support:</b></p> <ol style="list-style-type: none"><li>1. Print the thinking steps to help students break the multiples of 10 into number sentences. (See printables.)</li></ol> <p><b>To challenge:</b></p> <ol style="list-style-type: none"><li>1. Ask students to explain their tactics. What is the best tactical way to play the game? Do you go big on the first turn and small on the last turn? Why or why not?</li><li>2. Level up the game by introducing a 2nd dice into the game. Students could choose either dice, add them together or subtract one from the other before choosing what amount they want to multiply by.</li></ol>	<p><b>If Then:</b></p> <p>If students can multiply by multiples of 10 and 100, what else can they multiply?</p> <p><b>Check for understanding:</b></p> <ol style="list-style-type: none"><li>1. Can students solve the number sentences on the board? E.g. <math>30 \times 40</math> could be broken into <math>3 \times 10 \times 4 \times 10</math> which <i>could</i> become <math>3 \times 4 \times 100</math>.</li></ol>

## Things that might be useful for this lesson:

- Individual whiteboards:
  - Help students to record their thinking and share ideas with others.
- Flexible number thinking steps:
  - Help students to break numbers into more manageable chunks.
- Dice:
  - Will be used during the game.



## Peek at the Printables:

Sunlight Zone	Twilight Zone	Midnight Zone
<p><b>Sunlight Rules</b></p> <p><b>Sunlight_Trophy_Target</b></p> <p>1. Each player gets 4 turns. You MUST take all of your turns. 2. Player 1 rolls a dice. They need to multiply the number they rolled by one of the amounts in the coloured boxes. 3. The product is the amount of points you score in that round. 4. After 4 rounds, the player who is closest to the target number without going overboard wins a point. 5. The first player to win 3 points is the winner!</p> <p>5,000</p> <p>X 50 or X 500 X 40 or X 400 X 30 or X 300 X 20 or X 200</p>	<p><b>Twilight Rules</b></p> <p><b>Twilight_Trophy_Target</b></p> <p>1. Each player gets 4 turns. You MUST take all of your turns. 2. Player 1 rolls a dice. They need to multiply the number they rolled by one of the amounts in the coloured boxes. 3. The product is the amount of points you score in that round. 4. After 4 rounds, the player who is closest to the target number without going overboard wins a point. 5. The first player to win 3 points is the winner!</p> <p>10,000</p> <p>X 70 or X 700 X 60 or X 600 X 50 or X 500 X 40 or X 400</p>	<p><b>Midnight Rules</b></p> <p><b>Midnight_Trophy_Target</b></p> <p>1. Each player gets 4 turns. You MUST take all of your turns. 2. Player 1 rolls a dice. They need to multiply the number they rolled by one of the amounts in the coloured boxes. 3. The product is the amount of points you score in that round. 4. After 4 rounds, the player who is closest to the target number without going overboard wins a point. 5. The first player to win 3 points is the winner!</p> <p>15,000</p> <p>X 90 or X 900 X 80 or X 800 X 70 or X 700 X 60 or X 600</p>



## Greener Alternatives:

- Skip printing the rules and verbally give students their target numbers. They could note them down in their math books.
- Alternatively, print a copy of the rules for students to refer to when needed.
- Make this game a reality! You could draw 4 circles (per game) on the ground using chalk. The last circle would need to include the target number. Students could 'hop' their way to the trophy target number and keep track of their score on whiteboards.

## Sunlight Trophy Target

1. Each player gets 4 turns.
2. Player 1 rolls a dice. They need to multiply the number they rolled by one of the amounts in the coloured boxes.
3. The product is the amount of points you score in that round.
4. After 4 rounds, the player who is closest to the trophy number without going overboard wins a point.
5. The first player to win 3 points is the winner!



X 50 or X 500

X 40 or X 400

X 30 or X 300

X 20 or X 200

## Sunlight Trophy Target

1. Each player gets 4 turns.
2. Player 1 rolls a dice. They need to multiply the number they rolled by one of the amounts in the coloured boxes.
3. The product is the amount of points you score in that round.
4. After 4 rounds, the player who is closest to the trophy number without going overboard wins a point.
5. The first player to win 3 points is the winner!



X 50 or X 500

X 40 or X 400

X 30 or X 300

X 20 or X 200

## Twilight Trophy Target

1. Each player gets 4 turns.
2. Player 1 rolls a dice. They need to multiply the number they rolled by one of the amounts in the coloured boxes.
3. The product is the amount of points you score in that round.
4. After 4 rounds, the player who is closest to the trophy number without going overboard wins a point.
5. The first player to win 3 points is the winner!



X 70 or X 700

X 60 or X 600

X 50 or X 500

X 40 or X 400

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## Twilight Trophy Target

1. Each player gets 4 turns.
2. Player 1 rolls a dice. They need to multiply the number they rolled by one of the amounts in the coloured boxes.
3. The product is the amount of points you score in that round.
4. After 4 rounds, the player who is closest to the trophy number without going overboard wins a point.
5. The first player to win 3 points is the winner!



X 70 or X 700

X 60 or X 600

X 50 or X 500

X 40 or X 400

## Midnight Trophy Target

1. Each player gets 4 turns.
2. Player 1 rolls a dice. They need to multiply the number they rolled by one of the amounts in the coloured boxes.
3. The product is the amount of points you score in that round.
4. After 4 rounds, the player who is closest to the trophy number without going overboard wins a point.
5. The first player to win 3 points is the winner!



X 90 or X 900

X 80 or X 800

X 70 or X 700

X 60 or X 600

## Midnight Trophy Target

1. Each player gets 4 turns.
2. Player 1 rolls a dice. They need to multiply the number they rolled by one of the amounts in the coloured boxes.
3. The product is the amount of points you score in that round.
4. After 4 rounds, the player who is closest to the trophy number without going overboard wins a point.
5. The first player to win 3 points is the winner!



X 90 or X 900

X 80 or X 800

X 70 or X 700

X 60 or X 600

## Recording Logs

Turn	Number Sentences	Total	Turn	Number Sentences	Total
1.			1.		
2.			2.		
3.			3.		
4.			4.		

Turn	Number Sentences	Total	Turn	Number Sentences	Total
1.			1.		
2.			2.		
3.			3.		
4.			4.		

# Thinking Steps

