Every year before seeding a farmer has to think about the area of canola and other crops they want to grow. They start planning very early for this to make sure they have enough seed during seeding time.
Grandpa Duffy would like your help to determine the area and perimeter of his field.
Materials:

- 2 coloured markers or 2 coloured pencil crayons [1 for each player]
- 2 players (evenly skilled)
- 2 dice [numbered 1-6]
- 1 piece of grid paper for each game with each square measuring 1 cm²


## Objective of the game:

Build up the largest amount of total surface area first on the grid paper.
Number of players: 2
Getting ready to play:

1. Each player chooses a coloured pencil crayon they will use in the game.
2. Find Chase's Duffy's HELPFUL FACTS on p. 66 of this book
3. Rip out the double-sided grid paper on p. 64-65
4. Find 2,6 -sided dice with numbers $1-6$ on the dice.
 Assign die 1 as length and die 2 as width.


## Area and Perimeter of a Canola Field Gameboard



Instructions:

1. Players take turn rolling both dice together on each turn. Players then use the rolled numbers to draw the perimeter of a rectangle or square. For example, if die 1 was a 2 and die 2 was a 3, the formula would be as follows:

- area $=$ length $\times$ width $\circ r$ area $=[$ die 1] $\times($ die 2$]$ or area $=$ $2 \mathrm{~cm} \times 3 \mathrm{~cm}$

Area $=2(\mathrm{~cm}) \times 3[\mathrm{~cm}]=6[\mathrm{~cm} 2]$
2. Once the area is calculated, use die 1 to draw the length of the square and die 2 to draw the width of the square or rectangle on the grid paper with your chosen color, and players can start drawing squares or rectangles on any

- area on the paper.

3. Next, record the calculated area in the middle of the shape.
4. Note: squares cannot overlap each other, but can touch each other.
5. Game ends when players run out of room to draw squares by either player.
6. Each player calculates their total area from all of their squares or rectangles drawn on the page.
7. The winner is the player who has the largest total area from all of their squares or rectangles drawn on the page.



Area and Perimiter of a Canola Field


Chase Duffy's Multiplication Facts...



| $\mathbf{X}$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ | $\mathbf{7}$ | $\mathbf{8}$ | $\mathbf{9}$ | $\mathbf{1 0}$ | $\mathbf{1 1}$ | $\mathbf{1 2}$ |
| $\mathbf{2}$ | $\mathbf{2}$ | $\mathbf{4}$ | $\mathbf{6}$ | $\mathbf{8}$ | $\mathbf{1 0}$ | $\mathbf{1 2}$ | $\mathbf{1 4}$ | $\mathbf{1 6}$ | $\mathbf{1 8}$ | $\mathbf{2 0}$ | $\mathbf{2 2}$ | $\mathbf{2 4}$ |
| 3 | $\mathbf{3}$ | $\mathbf{6}$ | $\mathbf{9}$ | $\mathbf{1 2}$ | $\mathbf{1 5}$ | $\mathbf{1 8}$ | $\mathbf{2 1}$ | $\mathbf{2 4}$ | $\mathbf{2 7}$ | $\mathbf{3 0}$ | $\mathbf{3 3}$ | $\mathbf{3 6}$ |
| 4 | $\mathbf{4}$ | $\mathbf{8}$ | $\mathbf{1 2}$ | $\mathbf{1 6}$ | $\mathbf{2 0}$ | $\mathbf{2 4}$ | $\mathbf{2 8}$ | $\mathbf{3 2}$ | $\mathbf{3 6}$ | $\mathbf{4 0}$ | $\mathbf{4 4}$ | $\mathbf{4 8}$ |
| 5 | $\mathbf{5}$ | $\mathbf{1 0}$ | $\mathbf{1 5}$ | $\mathbf{2 0}$ | $\mathbf{2 5}$ | $\mathbf{3 0}$ | $\mathbf{3 5}$ | $\mathbf{4 0}$ | $\mathbf{4 5}$ | $\mathbf{5 0}$ | $\mathbf{5 5}$ | $\mathbf{6 0}$ |
| 6 | $\mathbf{6}$ | $\mathbf{1 2}$ | $\mathbf{1 8}$ | $\mathbf{2 4}$ | $\mathbf{3 0}$ | $\mathbf{3 6}$ | $\mathbf{4 2}$ | $\mathbf{4 8}$ | $\mathbf{5 4}$ | $\mathbf{6 0}$ | $\mathbf{6 6}$ | $\mathbf{7 2}$ |
| $\mathbf{7}$ | $\mathbf{7}$ | $\mathbf{1 4}$ | $\mathbf{2 1}$ | $\mathbf{2 8}$ | $\mathbf{3 5}$ | $\mathbf{4 2}$ | $\mathbf{4 9}$ | $\mathbf{5 6}$ | $\mathbf{6 3}$ | $\mathbf{7 0}$ | $\mathbf{7 1}$ | $\mathbf{8 4}$ |
| 8 | $\mathbf{8}$ | $\mathbf{1 6}$ | $\mathbf{2 4}$ | $\mathbf{3 2}$ | $\mathbf{4 0}$ | $\mathbf{4 8}$ | $\mathbf{5 6}$ | $\mathbf{6 4}$ | $\mathbf{7 2}$ | $\mathbf{8 0}$ | $\mathbf{8 8}$ | $\mathbf{9 6}$ |
| 9 | $\mathbf{9}$ | $\mathbf{1 8}$ | $\mathbf{2 7}$ | $\mathbf{3 6}$ | $\mathbf{4 5}$ | $\mathbf{5 4}$ | $\mathbf{6 3}$ | $\mathbf{7 2}$ | $\mathbf{8 1}$ | $\mathbf{9 0}$ | $\mathbf{9 9}$ | $\mathbf{1 0 8}$ |
| 10 | $\mathbf{1 0}$ | $\mathbf{2 0}$ | $\mathbf{3 0}$ | $\mathbf{4 0}$ | $\mathbf{5 0}$ | $\mathbf{6 0}$ | $\mathbf{7 0}$ | $\mathbf{8 0}$ | $\mathbf{9 0}$ | $\mathbf{1 0 0}$ | $\mathbf{1 1 0}$ | $\mathbf{1 2 0}$ |
| 11 | $\mathbf{1 1}$ | $\mathbf{2 2}$ | $\mathbf{3 3}$ | $\mathbf{4 4}$ | $\mathbf{5 5}$ | $\mathbf{6 6}$ | $\mathbf{7 1}$ | $\mathbf{8 8}$ | $\mathbf{9 9}$ | $\mathbf{1 1 0}$ | 121 | 132 |
| 12 | $\mathbf{1 2}$ | $\mathbf{2 4}$ | $\mathbf{3 6}$ | $\mathbf{4 8}$ | $\mathbf{6 0}$ | $\mathbf{7 2}$ | $\mathbf{8 4}$ | $\mathbf{9 6}$ | $\mathbf{1 0 8}$ | $\mathbf{1 2 0}$ | $\mathbf{1 3 2}$ | 144 |

