Game

Domino chain game

Games are a great resource. They support talk in maths and, just as important, they motivate us to persevere.

AIMS:
Investigate and identify game strategy.
Try alternative versions and see if the same strategies apply.

You will need:
To play this game you will need a set of dominoes (check that you have all 28!)
Or you can cut out the set on the following pages.

Rules of the game.
One player chooses odds and the other evens.
The aim of this game is to get the highest score when the odd and even numbers in the domino chain are added.

How to play

- Lay out the dominoes in front of you.
- Remove the doubles.
- Toss a coin to decide who will go first.
- Player 1 chooses a domino and starts the chain.
- Player 2 chooses a domino. It must share one number with the first.
- Player 1 plays again, using the same rule.
- The game continues until it is impossible to play any more dominoes.
- Add the odds and evens to see who has the highest points score.
- Play several times, swapping who starts – first to score 100 points is the winner.
To get started, study the first 6 moves of this example game...

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1 3 3 6 6 5 5 4 4 3 3 2 ? ? ? ?
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**Player 1**’s moves are shown with **green** dominoes and she is playing **odds**.

**Player 2**’s moves are shown with **orange** dominoes and he is playing **evens**.

Player 1 starts with **1-3**, both odd numbers (so scoring 4). Player 2 plays **3-6** giving away 3 points to Player 1, but gaining 6.

Player 1 plays **6-5** giving away even 6, but gaining 5. Player 2 plays **5-4**, giving away odd 5, but gaining 4.

Player 1 plays **4-3** giving away even 4 but gaining 3. Player 2 plays **3-2** giving away odd 3 but gaining 2.

**How might this game continue?**

Now let’s think about a **good strategy** for a single game.

- Do you think it is better to go first or second?
- Do you think it is better to be odds or evens?
- Is it best to start with your highest scoring single domino (i.e. 5-3 or 6-4) or save it for later?
- When is the best time to play the zeroes (i.e. dominoes with a blank)?
- Is it better to try to keep the chain going, or better to end it if you get a chance?

**Now try one of these five alternative versions...**

- Include the doubles.
- Continue the chain in either direction from the first domino.
- Choose the first domino randomly.
- Player 1 scores all the 6s, 3s and 2s, Player 2 scores all the 5s, 4s and 1s.
- Anyone playing a zero loses a point!