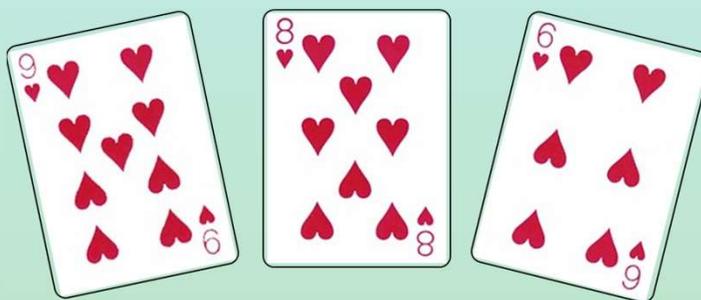


Special Numbers Game: Doesn't Belong

This strategy lesson is based on the game described below and focusses on flexibly identifying the properties of numbers to make a case for deciding which of the 3 cards does not belong. For instance if the following three cards are dealt there are many justifications for inclusion or exclusion, each equally valid.



“9 is a square number and the others are not, so 9 doesn't belong.”

“9 and 6 are multiples of 3, but 8 isn't, so 8 doesn't belong.”

“6 is a triangular number the others are not.”

Resources

This game uses all the playing cards from the same suit and the convention that Ace = 1, Jack = 11, Queen = 12 and King = 13.

The students will also need a timer, pencils and paper.

The rules of the game are explained in the Teacher Slides.

Slide 11

Doesn't Belong

Start the timer and deal three cards to each player. Each player writes down reasons why the first, second and third of their cards doesn't belong.

For each reason why a card doesn't belong	You score 1 point
--	----------------------

The other players need to agree that the reason is valid.

At the end of three rounds,
the player with the highest
total is the winner.

3 doesn't belong because it is not next to 4 or 5, but 7 is next to 8.

7 doesn't belong because $3 + 8 = 11$ which is a prime number. But $3 + 7 = 10$ which is not prime and $7 + 8 = 15$ which is not prime.

8 doesn't belong because it is not a prime number.

© 2020 Natural Maths

Special Numbers Game: Doesn't Belong

Introduction

Use the example above as a number talk to introduce the idea of justifying why a card might not belong in a sequence prior to introducing the game. Repeat once or twice with cards taken at random before introducing the game.

To Play

Arrange the students in groups of 3 – 4 and show them the Teacher Slide to help them understand the rules. We suggest the timer be set to 5 minutes (as a rough guide).

Encourage the players to keep records of the cards they were dealt and their “best” reason why one of the cards doesn't belong. Also, if there is a card they can't find a good reason to exclude, ask them to make a note of that too.

Reflection

Base your reflection on the records that the students have made as they played the game.

Particularly, if players cannot find a reason why one of the cards does not belong, they can present that as a challenge to other players or to the class for a number talk.





Doesn't Belong

Start the timer and deal three cards to each player.
Each player writes down reasons why the first, second and third of their cards doesn't belong.

For each reason **You score**
why a card doesn't belong **1 point**

The other players need to agree that the reason is valid.

At the end of three rounds,
the player with the highest
total is the winner.

3 of clubs, 7 of clubs, 8 of clubs

3 doesn't belong because it is not next to 7 or 8, but 7 is next to 8.

7 doesn't belong because $3 + 8 = 11$ which is a prime number. But $3 + 7 = 10$ which is not prime and $7 + 8 = 15$ which is not prime..

8 doesn't belong because it is not a prime number.