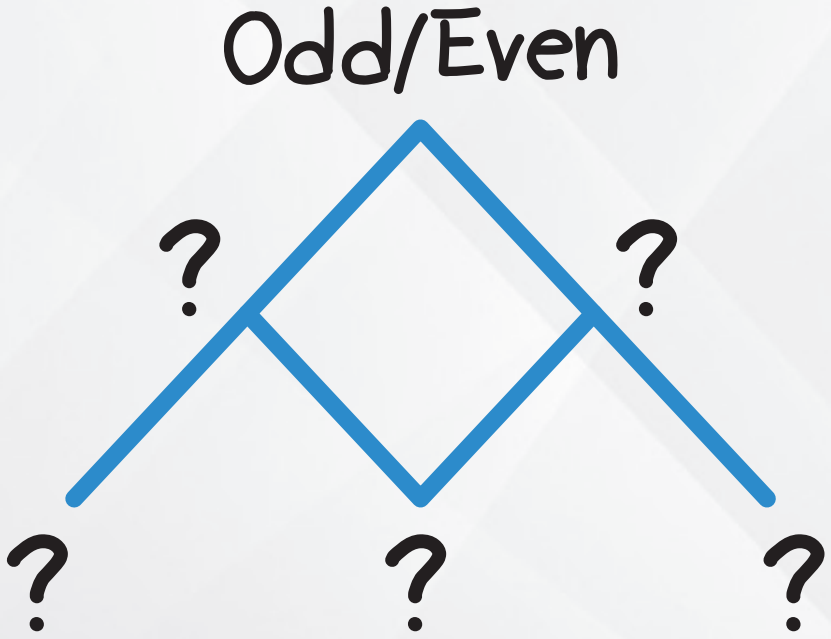
Mathletics

Series E

ODD OR EVEN APEX



Rich Learning Task | Reasoning

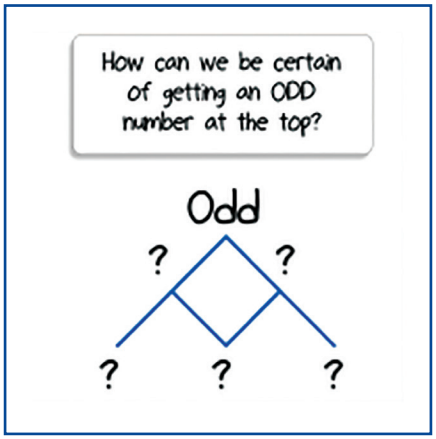
Odd or Even Apex

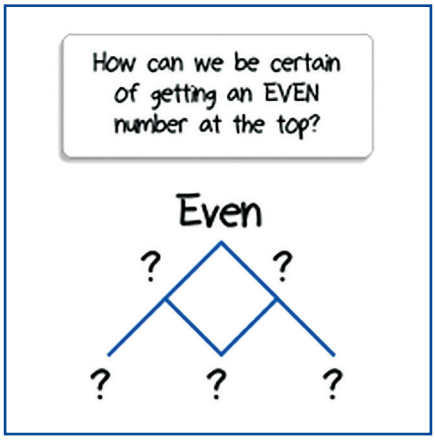
What's the point of the task?

This task requires students to devise a rule for obtaining either an odd or an even number at the top of the number pyramid.

First students will need to investigate how the number pyramid works by coming up with a rule for finding the number at the top using three different numbers along the base. Then they need to apply this algebraic reasoning to investigate the result of different positions of odd and even numbers.

Ultimately this task is about generalising patterns made by combining odd numbers and even numbers in different ways through algebraic reasoning.





Questions to facilitate the learning

- Start with 3 consecutive numbers into the base. What happens?
- Next, use the same numbers in a different order, now what happens?
- Might you use consecutive numbers for finding both odd and even numbers at the top? Why or why not?

Curriculum connections

This task is a useful context for generating rich discussions and developing number sense.

Encourage students to communicate and share their findings in small groups and then share as a whole group.

Scaffolding the learning

- Can you see what is happening in the pyramid?
- Enter 3 consecutive numbers less than 5.
- Next, enter the same numbers in different positions.
- How many different totals can you make?
- How can you position the numbers so that there is an odd number at the top? Or an even?

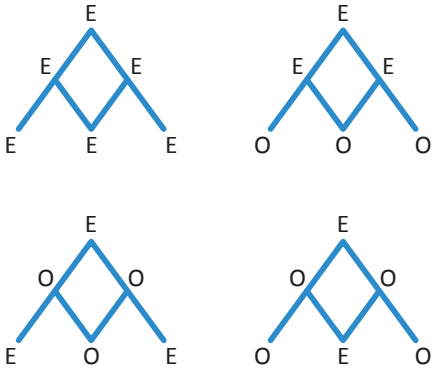
Extending the learning

Have you found all the possible ways to ensure either an odd or an even number appears at the top?

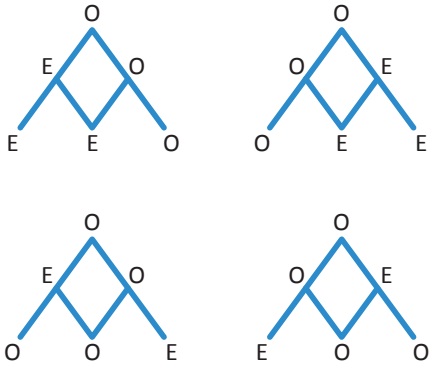
How would your rule change if you had a pyramid with 4 numbers on the base?

Solution

Possible arrangement of numbers in the base for finding EVEN numbers are:



Possible arrangement of numbers in the base for finding ODD numbers are:



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Odd or Even Apex

Investigate how the number pyramid works.

Come up with a rule for ensuring either an odd or an even number appears at the top of the pyramid.

Can you explain why your rule works?

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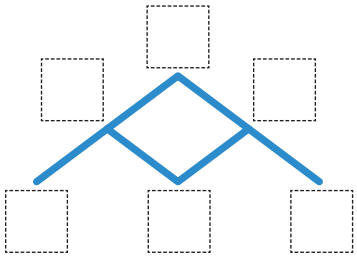
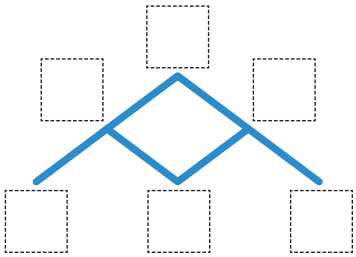
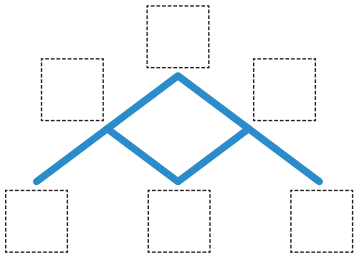
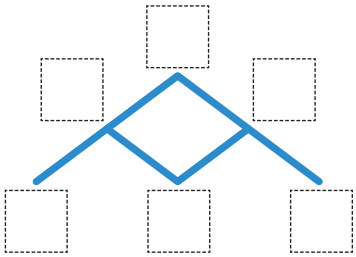
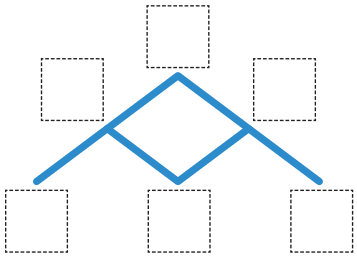
Worksheet

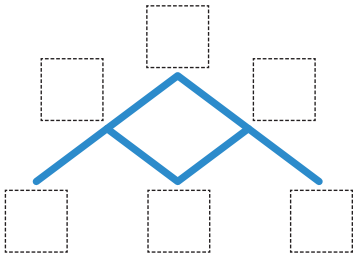












Name _____

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