Bronze

1a. 1, 5

2a. 2

3a. 15 and 25 = 5; 6 and 9 = 3; 14 and 20 = 2

4a. 1, 2, 5, 10

1b. 10 and 20 – 1, 2, 5, 10

2b. Dean is not correct. The number 5 is not a factor of 12. The largest common factor of 12 and 15 is 3.

3b. 2 is a factor of 6 and 10 so it should be in the middle of the Venn diagram.

Silver

5a. 1, 2, 4, 8

6a. 6

7a. 36 and 42 = 6; 55 and 99 = 11; 24 and 48 = 4
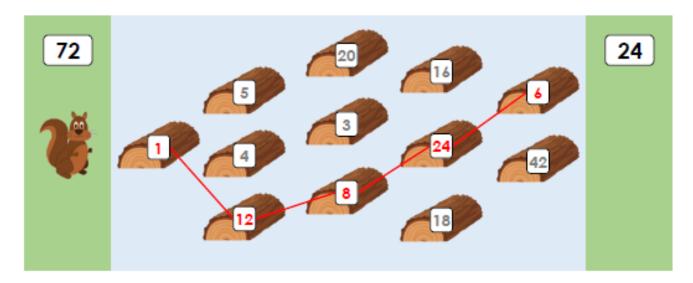
8a. 1, 2, 4

4b. 16 and 24 – 1, 2, 4, 8

5b. Benji is not correct. The number 9 is the largest common factor of 54 and 63.

6b. 11 is a factor of 22 and 66 so it should be in the middle of the Venn diagram.

Gold

9a. 1, 2, 4, 5, 10, 20

10a. 11

11a. 84 and 108 = 12; 26 and 52 = 13; 72 and 144 = 9

12a. 1, 2, 3, 4, 6, 12

Challenge

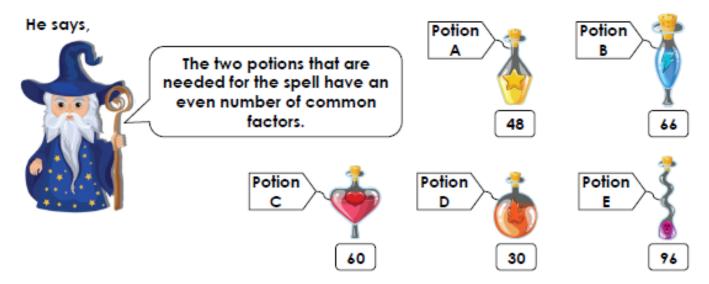1. Squeak the Squirrel wants to cross the river.

He can only step on the logs which are common factors of the numbers on both banks.

Explore the route Squeak could take. Is there more than one possible route?

Various answers, as shown above.

2. Wilf the Wizard is trying to combine two potions in order to create a spell.

He says,

The two potions that are needed for the spell have an even number of common factors.

Potion A
48

Potion B
66

Potion C
60

Potion D
30

Potion E
96

When matching the two potions, the common factors they share cannot be lower than 5 factors otherwise they will explode!

Explore the different combinations of potions Wilf could use to create his spell.

Various answers, for example:
Potion A can be matched with potions C or E.

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