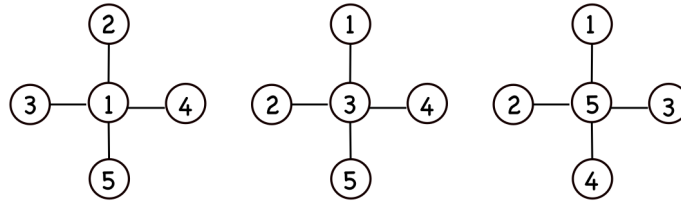


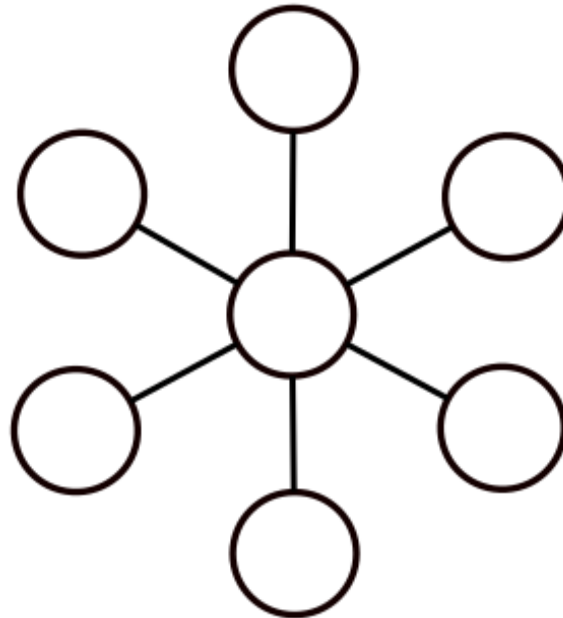
Puzzle of the Week

Magic Flowers – 1

The sums in a *Magic Flower* are the same for all straight lines. These Magic Flowers use numbers from 1 to 5.



THE CHALLENGE: Use the numbers from 1 to 7 to make Magic Flowers.



1 2 3 4 5 6 7

EXPLORATION: Play around with what happens with Magic Flowers with more than three lines.

Puzzle of the Week

Magic Flowers – 1 – Notes

THE CHALLENGE: Use this puzzle after the Magic Pluses puzzle.

This, like many of these Puzzles of the Week, can be attacked by playing around with the numbers until a solution is found. Don't be tempted to think that a more structured approach is better for your students – a great deal will be learned about the mathematics involved and about problem solving by tenaciously working through many examples. Finding a solution, by any method, is always a wonderful reward.

Most of these “equal sum” puzzles can be attacked by adding up some of the straight lines. In the case of this puzzle, add up the three directions - this will include all the numbers once, plus the central circle's number two extra times. The sum of 1 to 7 is 28. So, the sum of the three lines is $28 + 2x1$, $28 + 2x2$, $28 + 2x3$, $28 + 2x4$, $28 + 2x5$, $28 + 2x6$, or $28 + 2x7$. Of those, only $30 = 28 + 2x1$, $36 = 28 + 2x4$, and $42 = 28 + 2x7$ are divisible by 3. Dividing them by 3 tells us that the common sums are either $10 = 30 / 3$, $12 = 36 / 3$, or $14 = 42 / 3$.

Let's look at those three cases.

Common Sum of 10: The central circle will be 1. Making a sum of 10 with a 1 in the center means the other two numbers add up to 9. So, the three directions are: (2 1 7) - (3 1 6) - (4 1 5).

Common Sum of 12: The central circle will be 4. Making a sum of 12 with a 4 in the center means the other two numbers add up to 8. So, the three directions are: (1 4 7) - (2 4 6) - (3 4 5).

Common Sum of 14: The central circle will be 7. Making a sum of 14 with a 7 in the center means the other two numbers add up to 7. So, the three directions are (1 7 6) - (2 7 5) - (3 7 4).

EXPLORATION: Look at the Notes page for Magic Flowers - 2.