Assessment: Cake problem

Assessment task

Students will use their understanding of an algorithm to help them work out a word problem that requires an understanding of common factors.

Guidance:

Assessing student understanding will involve checking results and describing any emerging patterns. Students will apply their understanding of division to identify the factors for each number and look for the lowest common factor between the set of numbers (9, 12 and 15). Note, when looking for common factors, 1 is assumed and therefore not included in the search.

The assessment of student understanding for this task may include:

- Understand the purpose and use of an algorithm
- Accuracy of following an algorithm
- Interpreting emerging patterns

Student response notes:

1. How might you use these algorithms to help you work out the problem?

Possible response: The algorithms help you work out the common factors of the three numbers (by applying rules and patterns for 3s and 5s facts). 3 is the only common factor for each of these numbers so that must be how many cakes are in each packet.

2. Show how you worked out the problem.

Note whether students:

- Replicate the algorithm in full for each number they test
- Test all 3 numbers to find the solution
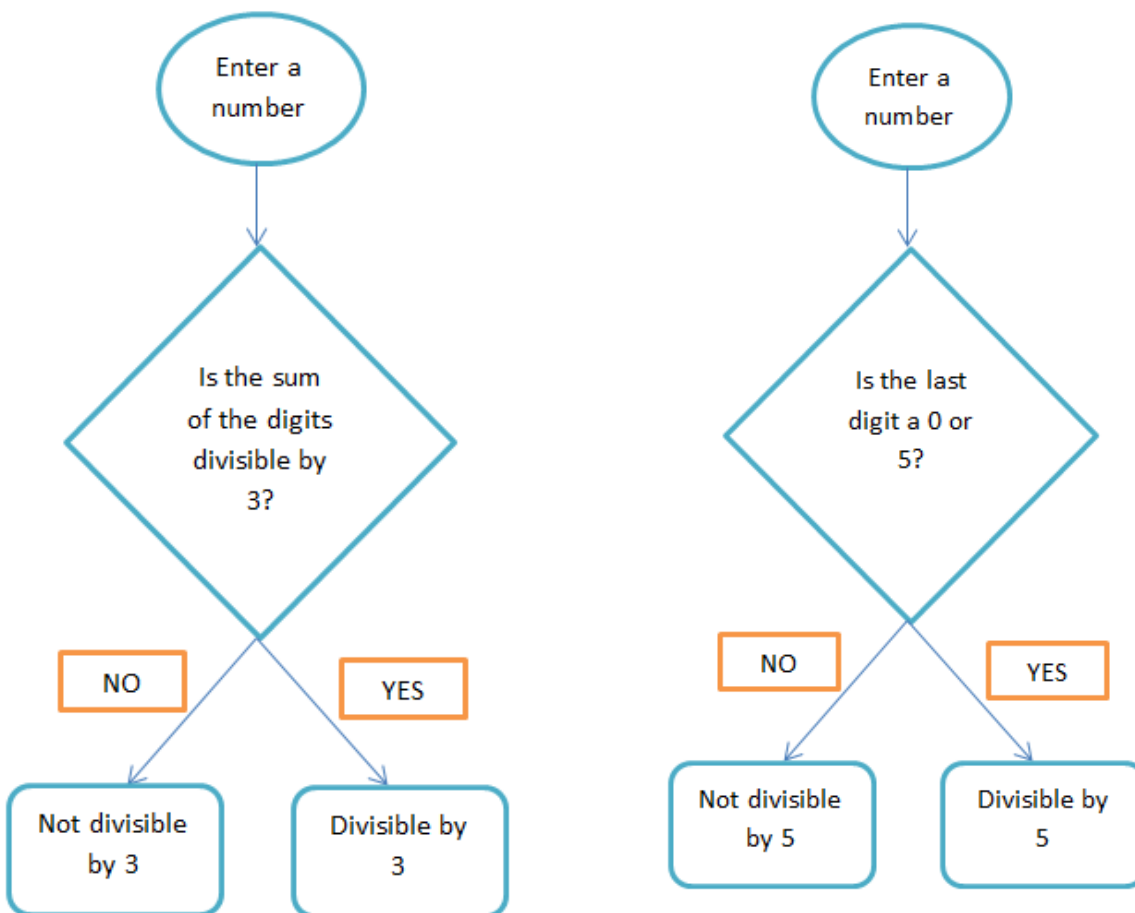- Understand the factor provides the number of cakes in a packet

Cake problem

Task:

Mindy, Joe, and Sammy buy packets of cakes. Mindy has 12 cakes, Joe 15 cakes, and Sammy 9 cakes. A packet contains the same number of cakes. How many cakes are there in each packet?

1. How might you use these algorithms to help you work out the problem?

Enter a number

Is the sum of the digits divisible by 3?

NO

YES

Not divisible by 3

Divisible by 3

Enter a number

Is the last digit a 0 or 5?

NO

YES

Not divisible by 5

Divisible by 5

2. Show how you worked out the problem.