Complete these activities throughout the week. You may do them in order.

TASTY DIVISION

Hazel is allowed to buy one bag of sweets every week with some of her pocket money.

She tries to make the sweets last several days.

1. One week, the bag she bought had 24 sweets in it. She ate ¼ of them one day, 1/3 of what was left the next day, and ½ of what was left the following day.

How many sweets did she eat each day, and how many did she have left after that?

2. The next week, she started with 30. She ate 1/5 on the first day, 1/3 of what was left on the second day, ¼ of what was left on the third day, and a 1/3 of what was left on the fourth day. On the fifth day, she ate ½ of what was left and finished the rest the following day.

How many did she eat each day?

3. The following week, Hazel's friend Lucy visited her on Monday, the day she brought her bag of sweets. That day they ate ½ the bag of sweets. On Tuesday, Hazel ate 2/3 of what was left, and on Wednesday, she also ate 2/3 of what was left. She had 2 sweets left for Thursday.

How many sweets did she have in her bag to begin with?

4. The week after that, Hazel ate ¼ of her sweets on Monday, 1/5 of what was left on Tuesday, 1/4 of what was left on Wednesday, and ½ of what was left on Thursday. She ate 1/3 of what was left on Friday and had six sweets left for Saturday.

How many sweets did she have in her bag to begin with?

5. Make up a sweet- eating problem involving Hazel eating a fraction of her sweets each day. You must have at least 5 days and use at least ¼, 1/3, and ½ in your problem. Work out the solutions and then be ready to share with a classmate.

OTHER NAMES FOR NUMBERS

The Romans used letters as their numerals.

I	V	X	L	C	D
1	5	10	50	100	500

Some numerals are formed by adding. EXAMPLE   LV is 50 + 5 = 55

1. What is the value of these Roman numerals?

A) II   b)   VI   c)   XV   d) LXX

E) CXXX   f)   DCC   g)   LXXV   h) CXVI

I) CLXXXVIII   j)   DCCCLXXVI

2. Write the Roman numerals for

A) 7   b)   18   c)   75   d) 166

E) 732

Some numerals are formed by subtracting EXAMPLE XC is 100 – 10 = 90

The only letters that can be subtracted are:

I which only goes before V or X.

X which only goes before L or C.

C which only goes before D or M.

3. What is the value of these Roman numerals?

A) IV   b)   IX   c)   XXIX   d) XL

E) XC   f)   CD   g)   XLIX   h) CXCIV

I) CDXLIV   j)   CDXCIX

4 Write the Roman Numerals for

A) 19   b)   44   c)   149   d)   499

E)   494

ALIEN   COUNTING

The Cartoks are an alien race. They have three fingers on each hand, and they use these for counting.

1   Some Cartoks were travelling through space when they saw a planet with all its moons in view.

They recorded what they saw in their space log:

Planet	Number of moons
unknown	13

Earthlings have 10 fingers. Their record would read:

Planet	Number of moons
unknown	9

Explain how both records of the number of moons could be right.

Explain your reasoning , using diagrams or numbers.

2. The Cartoks later passed a solar system of planets around a red sun.

   This time, their record showed that there were 13 planets around the sun.

   What would Earthlings have recorded in their records?

   Explain your answer.

3. 11 in Earthling numbers would be 15 in Cartok counting, one lot of 6 and five 1s.

   Change the following Earthling numbers into Cartok counting:

a) 8   b) 17   c) 26   d) 30

4. The Earthling counting system uses the following place values:

1	10	100	1 000	10 000	100 000	1000000	10 000 000	...

Complete the following table to show the Cartok's place values in Earthling counting:

1	6	36						

5 Change the following Cartok numbers into Earthling numbers:

a) 43   b) 52   c) 124   d) 1 253

The Vanans are another alien race . They have four fingers on each hand and have developed their counting in the same way as Earthlings and Cartoks. Answer questions 1,2 and 3 using the Vanan's counting system.

6. Invent another alien race and their alien counting system. Convert 6 Earthling numbers into your race's counting system.

PURCHASING   PAYMENTS

Mat wants to buy a DVD   player, but it's taking a long time for him to save up. He decides to buy the DVD player now and pay it off with his pamphlet money. He checks out the deals from three different shops on the DVD player he wants.

LOUD NOISE COMPANY
   $ 425
 25% deposit and
$27.42 per month for 12 months
     or no deposit and
$17.32 per month for 30 months.

   BOOMS
$ 465
10% deposit and
$14.95 per month for 30 months
    Or   50% deposit and
$21.15 per month for 1 year.

BASE CONTROL LTD
   $395
No deposit and
$13.65 per month for 36 months
  Or 15% deposit and $ 17.09 per month
for 24 months.

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1 a.   Which deal is the cheapest for Mat?

   b. How much cheaper is it than the other deals on offer?

2. Base Control Ltd told Mat that they would match the deal of any of their competitors as closely as possible, but the payment period must still be for 24 or 36 months.

Investigate the ways in which they could offer the best deal while still keeping their profit as high as possible. Record at least one way for each length of time.

IT PAYS TO WIN

Sione is a professional rugby league player with a contract that is based on performance.
He gets paid $82,000 a year plus the following extras:
- $1,000 for every game his team wins
- $ 500 for every game his team draws
- $100 for every goal he kicks (penalties or conversions).

1 a. If Sione's team has the following record (won 17   drew   2   lost 11) for the season and Sione kicks 46 goals, how much does he earn for the year?

   b. What is his average pay per game?

2. The team management decides that the players need a greater reward for winning, so they change the extras for the next season. Sione's contract now includes:
- $ 1, 300 for a win
- $ 500 for a draw
- $150 for every goal he kicks

a. How much would Sione have made the season before with the new payments?
b. how much better off would he have been?

3.a. During this second season, Sione's team wins 15 games, draws 5, and loses 10. Sione kicks 38 goals.
How much does he make for this season under the new payments?

b. Compare the payments Sione actually receives for the two seasons. How much more or less does he get paid for the second season?