## Grade 6 Mathematics

Blackline Masters

## BLM 6.N.1.1: Small Decimals

a) 0.28145
b) 0.00259
c) 0.25005
d) 0.8097
e) $\quad 0.3004$
f) 0.38703
g) 0.20507
h) 0.2435906
i) 0.9905001
j) 0.39040103

## BLM 6.N.2.1: Nedy's Bike Ride

Nedy used her bike to go everywhere. Today, she took a small notebook to record all her bike trips for the day. Then, she remembered yesterday's rides and she recorded them too.

## Today

First, Nedy rode to school. The school is 245 m away from Nedy's house. Then, she rode back home. Later on, Nedy rode with her Mom to the grocery store and back. The grocery store is 2.3 km away from her house.

## Yesterday

First, Nedy rode to Lily's house. Lily lives 342 m away from Nedy's house. Then, the two of them rode to school and back to Lily's house. Lily lives 439 m away from the school. Later, Nedy went home for supper.

## BLM 6.N.2.2: Am I Reasonable?

1. Rose read that in a certain country 35000000 people are living in cities and 47000000 are living in rural areas. She concluded that the total population is 82000000 .
2. Jim said that big numbers are easy to calculate. $839000000-60400000$ must be 200000000 .
3. Penny's laboratory has 305 containers of microscopic organisms. Each container has 199000030 organisms inside. Penny wrote in her notebook: "This laboratory has approximately 500000000000 microscopic organisms."
4. A company made $\$ 692000435$ profit last year. The president divided the profit among the 49 shareholders. Each shareholder received \$15000 000.

## BLM 6.N.2.3: Estimate and Solve

1. An oil company has 199000030 customers. If each customer buys 530 barrels of oil, how many barrels of oil does the company sell?
2. The local paper stated that 29000600 kg of wheat were sold last year, and 43006000600 kg of wheat were sold this year. How many kilograms of wheat were sold over the two years?
3. A group of 49 people retired and sold their company for $\$ 296000$ 435. How much did each person receive?
4. Out of the population of 835000000 , how many are employed if 64000000 are unemployed?

## BLM 6.N.2.4: Identify and Correct

1. In Country 1, there are 35000000 men and 47000000 women. In Country 2, there are 368000000 men and 200008020 women. Danny figures that the population of Country 1 is 82000000 and Country 2 is 569000000.
2. If Earth had 358000000 English-speaking people and 46000000 moved to another planet, how many would remain on Earth? Roby says 300000000 .
3. If 386000000 mosquitos hatch each summer, in 990 years there will be 386000000000 mosquitos.
4. Pam and her friends were discussing money. They decided that if they could win $\$ 896000000$ and divide it among all 20 of them, each would get $\$ 450000000$.

BLM 6.N.3.1: Multiples and Factors; Primes and Composites

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

## BLM 6.N.3.2: What's Common?

Set A: Find a common factor for each pair of numbers.

$$
9 \text { and 12; } 20 \text { and } 28 ; \quad 15 \text { and } 35
$$

Set B: Find a common multiple for each pair of numbers.

$$
8 \text { and 3; } \quad 9 \text { and 12; } \quad 4 \text { and } 26
$$

Set C: Find a common factor for each group of three numbers.

$$
15,21,63 ; \quad 54,72,81 ; \quad 28,56,84
$$

Set D: Find a common multiple for each group of three numbers.

$$
3,4,6 ; \quad 2,3,5 ; \quad 2,3,4
$$

## BLM 6.N.3.3: Dilly's Dilemma

Last week, Dilly got $\$ 10$ from Uncle Ed, $\$ 15$ from Grandma, and \$30 from Aunt Sue.

Dilly's older twin brothers, Bobby and Johnny, did not get any money from anyone. They decided to ask Dilly for some of her money in a very funny way.

The boys just had a math lesson on primes, composites, factors, and multiples, and they wanted to impress Dilly with their new terminology.

Bobby said: "All your numbers are composite. I want the largest common factor of the three numbers."

Johnny said: "I will be happy with the least common multiple, even if it is not prime."

Dilly did not know what her twin brothers were talking about. Do you?

Can you help Dilly?

## BLM 6.N.3.4: The Ten of Us

We are five friends. Each of us is a natural number.


Each of us has a cousin. They are 2 times our value.

| I am | I am | I am | I am | I am |
| :---: | :---: | :---: | :---: | :---: |
| 2 | 2 | 2 | 2 | 2 |
| times | times | times | times | times |
| A | B | C | D | E |

(The cousins have twice as many factors as each of the five friends.)
BLM 6.N.4.1: Fractions

BLM 6.N.4.1: Fractions (continued)

BLM 6.N.4.1: Fractions (continued)

BLM 6.N.4.1: Fractions (continued)

BLM 6.N.4.1: Fractions (continued)

BLM 6.N.4.1: Fractions (continued)

BLM 6.N.4.1: Fractions (continued)

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BLM 6.N.4.1: Fractions (continued)

BLM 6.N.4.1: Fractions (continued)

BLM 6.N.4.1: Fractions (continued)

BLM 6.N.4.1: Fractions (continued)

BLM 6.N.4.1: Fractions (continued)

BLM 6.N.4.1: Fractions (continued)

BLM 6.N.4.1: Fractions (continued)

BLM 6.N.4.1: Fractions (continued)

BLM 6.N.4.1: Fractions (continued)



BLM 6.N.4.2: Fraction Circles


BLM 6.N.4.2: Fraction Circles (continued)


BLM 6.N.4.2: Fraction Circles (continued)


BLM 6.N.4.2: Fraction Circles (continued)


BLM 6.N.4.2: Fraction Circles (continued)


BLM 6.N.4.2: Fraction Circles (continued)


BLM 6.N.4.3: Improper Fractions and Mixed Numbers

| Improper <br> Fraction | Pictorial <br> Representation | Mixed <br> Number |
| :---: | :---: | :---: |
| $\frac{7}{5}$ |  |  |
| $\frac{12}{5}$ |  |  |
| $\frac{18}{5}$ |  |  |
| $\frac{6}{5}$ |  |  |
| $\frac{8}{5}$ |  |  |
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BLM 6.N.4.4: State My Fraction

| Mixed <br> Number | Pictorial <br> Representation | Improper <br> Fraction |
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## BLM 6.N.4.5: Horizontal Number Line



## BLM 6.N.4.6: Vertical Number Line



## BLM 6.N.5.1: Uncle Farley's Farm Animals

Uncle Farley has a farm, and on his farm he has many different animals.

Here is the list of animals Uncle Farley has on his farm:

> 7 cows
> 4 horses
> 20 chickens
> 15 ducks
> 1 dog
> 3 cats

Uncle Farley is very proud of his many animals. He likes to count them. He also likes to show them to visitors.
BLM 6.N.5.2: Ratio Map for Uncle Farley's Farm Animals

| Animals <br> Compared | Ratio Form: <br> a:b | Ratio Form: <br> $\mathbf{a}$ <br> $\mathbf{b}$ | Ratio Form: <br> a to b | Description <br> (Pick one ratio form, and use it <br> in a sentence to describe <br> Uncle Farley's animals) |
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## BLM 6.N.5.3: Ratio Problems

1. The Grade 6 Art class consists of 9 boys and 12 girls.

State the following ratios:
a) boys to girls
b) boys to whole class
c) girls to whole class
2. Aunt Suzie planted 2 rows of carrots, 6 rows of tomato plants, and 5 rows of lettuce.

State the following ratios:
a) carrots to tomato plants
b) carrots to total number of rows
c) tomato plants to lettuce
d) tomato plants to carrots
d) lettuce to carrots
3. Billy has 4 pairs of brown socks, 3 pairs of blue socks, 1 pair of black socks, and 8 pairs of white socks.

State the following ratios:
a) brown socks to blue socks
b) brown socks to black socks
c) blue socks to white socks
d) blue socks to total pair of socks

## BLM 6.N.5.4: Uncle Bert's Ratio Riddle

Danny knows that his school is 1 km away from his house.
Uncle Bert says that you can figure out how far a place is if you know the ratio of the distances.

Danny wants to figure out how far is the nearest store.
Uncle Bert gives him a riddle full of ratios.
The distance to my house and the distance to Grandma's house have a ratio 5 to 20 .

The distance to the store and the distance to the arena have a ratio 3 to 8 .

The distance to Grandma's and the distance to the arena have a ratio 20 to 7 .

The distance to my house and the distance to the school have a ratio 5 to 1 .

## BLM 6.N.6.1: What Is My Equal?

State an equivalent fraction:
a) $\quad 0.28$
b) 0.59
c) $\quad 0.05$
d) 0.97
e) 0.30

State an equivalent decimal:
a) $\frac{34}{100}$
b) $\frac{5}{100}$
c) $\frac{43}{100}$
d) $\frac{99}{100}$
e) $\frac{62}{100}$

## BLM 6.N.6.2: Gizzy Saw These Birds

Last weekend, Gizzy went to the zoo with her Grandma. She saw many animals and birds. She liked them all but she was most impressed with the many coloured birds.

On Monday, Gizzy was happy to tell her friends that out of all the birds she saw, $25 \%$ were yellow, $42 \%$ were black, $10 \%$ were blue, $15 \%$ were white, and $8 \%$ were red.

BLM 6.N.6.3: My Ratio Is ... Who Has?

| My ratio is $95 \mathrm{sec} . / 100 \mathrm{sec}$. <br> Who has $7 \% ?$ | My ratio is $7 \mathrm{~km} / 100 \mathrm{~km}$. <br> Who has $51 \% ?$ |
| :--- | :--- |
| My ratio is $51 \mathrm{~cm} / 100 \mathrm{~cm}$. <br> Who has $99 \% ?$ | My ratio is 99 days $/ 100$ days. <br> Who has $28 \% ?$ |
| My ratio is $28 \mathrm{~m} / 100 \mathrm{~m}$. | My ratio is $19 \mathrm{~mL} / 100 \mathrm{~mL}$. <br> Who has $19 \% ?$ |
| My ratio is $87 \mathrm{~kg} / 100 \mathrm{~kg}$. | My ratio is $66 \mathrm{mg} / 100 \mathrm{mg}$. <br> Who has $66 \% ?$ |
| My ratio is $73 \mathrm{~km} / 100 \mathrm{~km}$. <br> Who has $89 \% ?$ | My ratio is $89 \mathrm{hr} . / 100 \mathrm{hr}$. |
| Who has $3 \% ?$ |  |

BLM 6.N.6.3: My Ratio Is ... Who Has? (continued)

| My ratio is $11 \mathrm{~min} . / 100 \mathrm{~min}$. <br> Who has $37 \% ?$ | My ratio is $37 \mathrm{~km} / 100 \mathrm{~km}$. <br> Who has $41 \% ?$ |
| :--- | :--- |
| My ratio is $41 \mathrm{~cm} / 100 \mathrm{~cm}$. <br> Who has $92 \% ?$ | My ratio is 92 days $/ 100$ days. <br> Who has $68 \% ?$ |
| My ratio is $68 \mathrm{~m} / 100 \mathrm{~m}$. <br> Who has $15 \% ?$ | My ratio is $15 \mathrm{~mL} / 100 \mathrm{~mL}$. <br> Who has $26 \% ?$ |
| My ratio is $57 \mathrm{~kg} / 100 \mathrm{~kg}$. <br> Who has $84 \% ?$ | My ratio is $26 \mathrm{mg} / 100 \mathrm{mg}$. <br> Who has $33 \% ?$ |
| My ratio is 2 doz. $/ 100$ doz. |  |
| Who has $47 \% ?$ | My ratio is $84 \mathrm{hr} . / 100 \mathrm{hr}$. |
| Who has $2 \% ?$ |  |

BLM 6.N.6.4: 100-Square Grid Paper

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## BLM 6.N.6.5: Percent Grids

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## BLM 6.N.6.6: Percent, Fraction, and Decimal Sheet

| Question <br> Number | Percent | Fraction | Decimal |
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| 20 |  |  |  |

BLM 6.N.6.7: Say My Equal Fraction, Say My Equal Decimal

| I am 69\%. | I am $16 \%$. |
| :---: | :---: |
| Say my equal fraction. | Say my equal fraction. |
| I am $6 \%$. | I am $21 \%$. |
| Say my equal fraction. | Say my equal fraction. |
| I am 30\%. | I am $46 \%$. |
| Say my equal fraction. | Say my equal fraction. |
| I am 95\%. | I am $62 \%$. |
| Say equal fraction. | Say my equal fraction. |
| I am $18 \%$. | I am $78 \%$. |
| Say equal fraction. | Say my equal fraction. |
| I am $82 \%$. | I am $100 \%$. |
| Say my equal fraction. |  |

BLM 6.N.6.7: Say My Equal Fraction, Say My Equal Decimal (continued)

| I am 3\%. | I am 8\%. |
| :---: | :---: |
| Say my equal decimal. | Say my equal decimal. |
| I am 19\%. | I am $23 \%$. |
| Say my equal decimal. | Say my equal decimal. |
| I am 31\%. | I am 49\%. |
| Say my equal decimal. | Say my equal decimal. |
| I am $56 \%$. | I am $62 \%$. |
| Say my equal decimal. | Say my equal decimal. |
| I am 88\%. | I am 76\%. |
| Say my equal decimal. | Say my equal decimal. |
| I am 93\%. | I am $100 \%$. |
| Say my equal decimal. | Say my equal decimal. |

## BLM 6.N.6.8: Percent Grids (One Row)



To make your three designs, use the following colours:

- light green gooseberries
- red red currents
- black blackberries
- purple raspberries


## BLM 6.N.6.9: Grandpa's Berry Bushes

Grandpa dug up a 10-metre-by-10-metre square area in the garden for his berry bushes.

Grandpa planted one berry bush in each square metre. He covered $24 \%$ of the dug-up area with gooseberries, $16 \%$ with red currents, $20 \%$ with blackberries, and $40 \%$ with raspberries because Grandpa likes raspberries the most.

Grandpa wants your help.

## BLM 6.N.7.1: Integers

A. 5 and 3
B. -6 and 0
C. 12 and -12
D. -7 and 2
E. 4 and -13
F. 7 and 7
G. 18 and -21
H. -8 and 5
I. $\quad 15$ and 17
J. $\quad-12$ and -12

## BLM 6.N.7.2: Compare Integers

| Integer A | Symbol $<,>$, or $=$ | Integer B |
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## BLM 6.N.8.1: Izabella's Teacher

Izabella's teacher told the class to use front-end estimation to solve the following decimal questions:
$\$ 27.83 \div 5=5566$
$492.23 \mathrm{~kg} \div 8=6152875$
$192.851 \mathrm{~m} \div 9=214279$
$51.158 \mathrm{~km} \div 7=7308$
$38.419 \mathrm{mg} \div 6=6403$
$\$ 693.19 \div 10=69319$
$810.732 \mathrm{~cm} \div 100=810732$

Then, Izabella's teacher told the class to carefully consider where they place the decimal point in the quotient.

## BLM 6.N.8.2: Decimal Products and Quotients

| Products | Quotients |
| :--- | :--- |
| $5.6 \mathrm{~cm} \times 2$ | $49.8 \mathrm{~mL} \div 8$ |
| $18.2 \mathrm{~mL} \times 5$ | $23.18 \mathrm{~m} \div 7$ |
| $21.3 \mathrm{mg} \times 6$ | $61.05 \mathrm{~km} \div 6$ |
| $82.106 \mathrm{~g} \times 3$ | $25.81 \mathrm{dg} \div 4$ |
| $95.023 \mathrm{dl} \times 4$ | $55.1 \mathrm{~cm} \div 9$ |
| $7.83 \mathrm{~kg} \times 10$ | $897.32 \mathrm{~g} \div 10$ |
| $9.214 \mathrm{~m} \times 100$ | $394.32 \div 100$ |

## BLM 6.N.8.3: Marie's Cell Phone Bill

Marie received her cell phone bill in the mail. She was shocked by how high it was. The bill states: "Payment required: $\$ 87.00 .{ }^{\prime \prime}$

Marie double-checked the bill. According to the bill, Marie gets charged $\$ 0.10$ per text, and her bill indicates that she texted only 87 times. Is her bill correct? Explain your thinking.

## BLM 6.N.8.4: Errors of Decimal Point Placement

| Products | Quotients |
| :--- | :--- |
| $23.32 \times 3=699.4$ | $498.72 \div 8=6.234$ |
| $22.21 \times 5=11.105$ | $721.28 \div 7=103.04$ |
| $21.2 \times 8=16.96$ | $61.05 \div 5=122.1$ |
| $82.106 \times 100=821.06$ | $35.88 \div 4=89.7$ |
| $95.053 \times 2=1901.06$ | $55.125 \div 9=61.25$ |
| $27.83 \times 10=278.3$ | $9297.32 \div 10=92.9732$ |
| $93.215 \times 100=932.15$ | $2394.12 \div 100=239.412$ |

## BLM 6.N.8.5: Multiplication and Division Problems Involving Decimals

## Set A

1. Kitty Cat eats four times a day. On Tuesday, Kitty Cat ate 12.86 hectograms of meat. How many hectograms of meat did Kitty Cat eat for each meal?
2. Black Colt gallops 3.15 kilometres each day. How many kilometres does Black Colt gallop in one week?

## Set B

3. Piggy runs 7.28 metres from the pigsty to the trough and the same distance back, 10 times a day. How many metres does Piggy run each day?
4. Bull Dog goes for a walk with his owner twice a day. During the past five days, Bull Dog walked 26.48 kilometres. How many kilometres does Bull Dog walk each time?

## BLM 6.N.8.6: Complete the Charts

| Multiplication |  | Division |  |
| :--- | :--- | :--- | :--- |
| A | $8.75 \times 1=8.75$ | D | $3967 \div 1=3967$ |
|  | $8.75 \times 10=87.5$ |  | $3967 \div 10=396.7$ |
|  | $8.75 \times 100=875$ | $3967 \div 100=39.67$ |  |
|  | $8.75 \times 1000=8750$ |  | $3967 \div 1000=3.967$ |
| B | $2.694 \times 1=$ |  | $6482 \div 1=$ |
|  | $2.694 \times 10=$ |  | $6482 \div 10=$ |
|  | $2.694 \times 100=$ |  | $6482 \div 100=1000=$ |
|  | $2.694 \times 1000=$ | F | $7419 \div 1=$ |
| C | $9.273 \times 1=$ |  | $7419 \div 10=$ |
|  | $9.273 \times 10=$ |  | $7419 \div 100=$ |
|  | $9.273 \times 100=$ |  | $7419 \div 1000=$ |
|  | $9.273 \times 1000=$ |  |  |

## BLM 6.N.8.7: Use Mental Math

| Products | Quotients |
| :--- | :--- |
| $23.14 \times 10=$ | $458.73 \div 100=$ |
| $7.21 \times 100=$ | $621.25 \div 100=$ |
| $1.872 \times 100=$ | $831.05 \div 10=$ |
| $382.61 \times 10=$ | $325.8 \div 10=$ |
| $94.023 \times 10=$ | $505.25 \div 10=$ |
| $2.837 \times 100=$ | $9297.32 \div 100=$ |
| $43.295 \times 100=$ | $7394.14 \div 100=$ |

## BLM 6.N.8.8: Question Sheet

1. You divide 2 numbers and the answer is 2.5 . What are the two numbers? What is the word problem that you are solving?.
2. Write a problem that uses the multiplication $1.9 \times 7$.
3. Create a question involving multiplication or division of decimals where the digits 4,9 , and 2 appear somewhere.
4. What would you draw to show $4.4 \times 8$ ?
5. Why does it make sense that $7.7 \times 9$ is one-tenth of $77 \times 9$ ?
6. How can you predict that $8 \times 2.3$ is between 16 and 20 ?
7. If you know that $714 \div 4=178.5$, explain how you know that $7.14 \div 4=1.785$.
8. A soup pot holds 17.78 litres.
a) If it held a little bit more, how much would it hold? Write this amount with digits in the tens, units, and tenths places ( $\qquad$ . _ _).
b) Each person will get a bowl of soup. Decide how much each person gets, between 0.2 and 0.4 L , but choose a number that has a digit in the hundredths place (0.___). How many servings would you get in the pot?

## BLM 6.N.9.1: One Solution, Two Solutions?

Bonny and Jenny loved to compare their work. Yesterday, their math teacher assigned the following question for homework:

$$
3+5 \times 7-2+9 \div 3=
$$

Both girls decided that the question needs to be split into many parts.

Bonny solved the problem like this:

$$
\begin{aligned}
& 3+5=8 \\
& 8 \times 7=56 \\
& 56-2=54 \\
& 54+9=63 \\
& 63 \div 3=21
\end{aligned}
$$

Then, Bonny stated:
$3+5 \times 7-2+9 \div 3=21$

Jenny solved the problem like this:

$$
\begin{aligned}
& 5 \times 7=35 \\
& 9 \div 3=3 \\
& 3+35=38 \\
& 38-2=36 \\
& 36+3=39
\end{aligned}
$$

Then, Jenny stated:
$3+5 \times 7-2+9 \div 3=39$

## BLM 6.N.9.2: Use Your Pencil: Set A

$6 \times 3+8 \div 2=$
$25-12 \div 3 \times 4=$
$63 \div 9+8 \times 3=$
$100 \div 2-5+6 \times 2=$
$2+3 \times 9-20 \div 5=$

## BLM 6.N.9.3: Use Your Pencil: Set B

$7 \times 9-3+24 \div 8=$
$72 \div 8+95-4 \times 7=$
$37-4 \times 6+72 \div 9+=$
$45 \div 5-5+7 \times 6=$
$43+9 \times 9-64 \div 8=$

## BLM 6.N.9.4: Use Your Calculator: Set A

$18 \times 6+240 \div 30=$
$630-180 \div 6 \times 5=$ $810 \div 9-12 \times 7=$
$960 \div 30+25 \times 9=$
$43+17 \times 9-270 \div 30=$

## BLM 6.N.9.5: Use Your Calculator: Set B

$26 \times 9-7+963 \div 3=$
$817+258 \div 6-13 \times 3=$
$490 \div 7-23+18 \times 9=$
$480 \div 8+89 \times 7=$
$94+51 \times 8-720 \div 90=$

## BLM 6.N.9.6: Tina's Ten Turkeys

Tina thought one day:


## BLM 6.N.9.6: Tina's Ten Turkeys (continued)

## Week 1

Tina thought of making:

- every day, an omelette for herself
- on Friday, two dozen waffles to feed the family
- on Sunday, a cake to celebrate


## Week 2

Tina thought of making:

- on Monday, Tuesday, Thursday and Saturday, an omelette for herself and an omelette for her brother
- on Wednesday and Friday, two dozen waffles to feed the family
- on Sunday, a cake to celebrate


## BLM 6.PR.1: Pattern Introduction



## BLM 6.PR.2: Horizontal Table \#1

| Term | 1 | 2 | 3 | 4 | 5 |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Number <br> of Tiles | 3 | 5 | 7 | 9 | 11 |

## BLM 6.PR.3: Horizontal Table \#2

| Term | 1 | 2 | 3 | 4 |  |  | 7 | 8 | 9 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Term Value | 9 | 19 | 29 |  | 49 | 59 |  | 87 | 91 |

## BLM 6.PR.4: Vertical Table \#1

As Brigitte walked into Mr. Xeno's classroom, she noticed something strange on his desk. When she got closer, this is what she saw:

| Term | Term Value |
| :---: | :---: |
| 1 | 1 |
| 2 | 4 |
| 3 | 7 |
| 5 | 10 |
| 6 | 19 |
| $\ldots$ | 22 |
| 100 | $\ldots$ |
|  |  |

## BLM 6.PR.5: King Klonig's Graph



## BLM 6.PR.6: Lily's Pattern



## BLM 6.PR.7: Mrs. Dean's Carpet

Mrs. Dean went to a carpet store and told the salesman that she needed a carpet for her living room.

The salesman asked Mrs. Dean for the dimensions of her living room.

Mrs. Dean said that her living room was rectangular in shape and the area of her living room was 20 square metres.
"Well, madam," said the salesman, "our carpets come in four different widths: one metre, two metres, two-and-a-half metres, and four metres. Which width do you need?"
"Let me see now." said Mrs. Dean. "I would need 20 metres of the one-metre-wide carpet, 10 metres if I went with the two-metre-wide carpet, but only eight metres of the two-and-a-half-metre-wide carpet, and oh let's see, only five metres of the four-metre-wide carpet. I wonder which one would look the best in my almost square living room."

## BLM 6.PR.8: Poff and Gloff's Math Homework

Poff and Gloff are best friends. They even do homework together, but not the same way. In fact, you can say that they do their math homework very differently.

Yesterday, their teacher gave them a math homework sheet with two long columns of numbers and said, "Add each pair of numbers and find the answer for each row."

Poff and Gloff looked at their homework sheets and made the following statements:

Poff said "I think we start with the left number and add the right one to it."
"No, Poff," said Gloff "I think we start with the number in the right column and add the number from the left column to it."

1. Check Poff's work for correctness, and use a mathematical expression to represent his work.
2. Check Gloff's work for correctness, and use a mathematical expression to represent his work.
3. Compare their work. (Did they get the same answer or different answers? How is that possible?)
4. Develop a general equation based on your observations and explain why you think it is so.

## BLM 6.PR.8: Poff and Gloff's Math Homework (continued)

| $\mathbf{a}$ | $\mathbf{b}$ | Poff's Work | Gloff's Work |
| :---: | :---: | :---: | :---: |
| 2 | 9 | $2+9=11$ | $9+2=11$ |
| 4 | 9 | $4+9=13$ | $9+4=13$ |
| 6 | 8 | $6+8=14$ | $8+6=14$ |
| 8 | 5 | $8+5=13$ | $5+8=13$ |
| 9 | 5 | $9+5=14$ | $5+9=14$ |
| 5 | 5 | $5+5=10$ | $5+5=10$ |
| 14 | 7 | $14+3=17$ | $3+14=17$ |
| 1 | 9 | $8+9=17$ | $9+8=17$ |
| 8 | 7 | $12+1=13$ | $1+12=13$ |
| 12 | 7 | $8+7=15$ | $7+8=15$ |
| 6 |  |  | $7+1=8$ |
|  |  |  |  |

## BLM 6.PR.9: Equation Pairs

Mini said that there are two different ways you can write an equation of an area. What do you think her two equations were for the following measurements?

| Width | Length | Equation 1 | Equation 2 |
| :---: | :---: | :---: | :---: |
| 3 m | 2 m |  |  |
| 6 km | 8 km |  |  |
| 8 km | 9 km |  |  |
| 9 cm | 5 cm |  |  |
| 5 m | 7 m |  |  |
| 4 m | 3 m |  |  |
| 3 km | 7 cm |  |  |
| 9 cm | 7 km |  |  |
| 7 km |  |  |  |

## BLM 6.PR.10: Baskets and Oranges

| Number <br> of <br> Baskets | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Number <br> of <br> Oranges | 7 | 14 | 21 | 28 | 35 | 42 | 49 |

## BLM 6.PR.11: Equivalent Forms of an Equation

Write four equivalent forms of this equation: $4 w=12$.
a) Add 8 to each side.
b) Subtract 5 from each side.
c) Multiply each side by 3 .
d) Divide each side by 4 .

Use buttons to verify your work.

BLM 6.PR.12: I Have, Who Has . . .?

| I have $5 x=2$ <br> Who has $6 t=0$ ? | I have $6 t+3=3 .$ <br> Who has $7 q=3$ ? | I have $7 q-2=3-2 .$ <br> Who has $2 \mathrm{~W}=9$ ? |
| :---: | :---: | :---: |
| I have $2 w+7=16 .$ <br> Who has $9 e=3$ ? | I have $3 e=1 .$ <br> Who has $r=4$ ? | I have $r+12=4+12$ <br> Who has $7 m=3$ ? |
| I have $7 m+3=6 .$ <br> Who has $18 n=3$ ? | I have $6 n=1 .$ <br> Who has $24 b=4$ ? | I have $6 b=1 .$ <br> Who has $7 z+3=3$ ? |
| I have $7 z=0$ <br> Who has $4 w+3=$ 5 ? | I have $4 w=2 .$ <br> Who has $10 v=7$ ? | I have $10 v+8=7+8$ <br> Who has $s=7$ ? |
| I have $6 s+8=15$ <br> Who has $8 c=3$ ? | I have $16 c=6 .$ <br> Who has $4 d=3$ ? | I have $16 d=12 .$ <br> Who has $8 u=11$ ? |
| I have $8 u-7=4 .$ <br> Who has $9 w=72$ ? | I have $w=8 .$ <br> Who has $25 f=5$ ? | I have $5 f=1$ <br> Who has $48 g=6$ ? |

BLM 6.PR.12: I Have, Who Has . . .? (continued)

| I have $8 g=1$ <br> Who has $7 q=8$ ? | I have $7 q+3=11$ <br> Who has $12 x=3$ ? | I have $12 x-2=1$ <br> Who has $15 f=60$ ? |
| :---: | :---: | :---: |
| I have $15 f \div 3=60 \div 3$ <br> Who has $13 y=39$ ? | I have $y=3 .$ <br> Who has $j=23$ ? | I have $\begin{gathered} j+13=23+13 \\ \text { Who has } 9 u=63 ? \end{gathered}$ |
| I have $u=7 .$ <br> Who has $15 z=3$ ? | I have $150 z=30 .$ <br> Who has $28 h=7$ ? | I have $4 h=1 .$ <br> Who has $25 p=125$ ? |
| I have $p=5 .$ <br> Who has $17 n=68$ ? | I have $n=4 .$ <br> Who has $5 k=15$ ? | I have $5 k+100=115$ <br> Who has $9 g=99$ ? |
| I have $g=11$ <br> Who has $f=13$ ? | I have $f-3=10$. <br> Who has $29 p=53$ ? | I have $29 p-30=53-30$ <br> Who has $14 a=28$ ? |
| I have $14 a+3=31 .$ <br> Who has $7 v-200=$ 300 ? | I have $7 v=500 .$ <br> Who has $96 n=32$ ? | I have $3 n=1 .$ <br> Who has $50 x=20$ ? |

## BLM 6.PR.13: Same As Cards

| $3 x+7=3+7$ | $3 x-3=3-3$ | $5(3 x)=5(3)$ | $3 x \div 3=3 \div 3$ |
| :---: | :---: | :---: | :---: |
| $3 x+7=10$ | $3 x-3=0$ | $15 x=15$ | $x=1$ |
| $4 x+4=36+4$ | $4 x-8=36-8$ | $3(4 x)=3(36)$ | $4 x \div 2=36 \div 2$ |
| $4 x+4=40$ | $4 x-8=28$ | $12 x=108$ | $2 x=18$ |
| $5 x+9=35+9$ | $5 x-6=35-6$ | $2(5 x)=2(35)$ | $5 x \div 5=35 \div 5$ |
| $5 x+9=44$ | $5 x-6=29$ | $10 x=70$ | $x=7$ |
| $6 x+14=62$ | $6 x-5=43$ | $30 x=240$ |  |
| $6 x+14=48+14$ | $6 x-5=48-5$ | $5(6) x=5(48)$ | $6 x \div 6=48 \div 6$ |
|  |  |  |  |
|  |  |  |  |

BLM 6.PR.13: Same As Cards (continued)

| $7 x+9=42+9$ | $7 x-8=42-8$ | $3(7 x)=3(42)$ | $7 x \div 7=42 \div 7$ |
| :---: | :---: | :---: | :---: |
| $7 x+9=51$ | $7 x-8=34$ | $21 x=126$ | $x=6$ |
| $8 x+7=56+7$ | $8 x-7=56-7$ | $2(8 x)=2(56)$ | $8 x \div 8=56 \div 8$ |
| $8 x+7=63$ | $8 x-7=49$ | $16 x=112$ | $x=7$ |
| $9 x+5=99+5$ | $9 x-7=99-7$ | $3(9 x)=3(99)$ | $9 x \div 9=99 \div 9$ |
| $9 x+5=104$ | $9 x-7=92$ | $27 x=297$ | $x=11$ |
| $8 x+13=25$ | $8 x-9=3$ | $24 x=36$ |  |
| $8 x+13=12+13$ | $8 x-9=12-9$ | $3(8 x)=3(12)$ | $8 x \div 4=12 \div 4$ |
|  |  |  |  |
|  |  |  |  |

BLM 6.PR.14: Same As Reply Sheet A

| $3 x=3$ | $3 x+7=3+7$ | $3 x-3=3-3$ | $5(3 x)=5(3)$ |
| :---: | :---: | :---: | :---: |
|  | $3 x+7=10$ | $3 x-3=0$ | $15 x=15$ |
| $4 x=36$ | $4 x+4=36+4$ | $4 x-8=36-8$ | $3(4 x)=3(36)$ |
| $5 x=35$ | $5 x+9=35+9$ | $5 x-6=35-6$ | $2(5 x)=2(35)$ |
|  |  | $4 x-8=28$ | $12 x=108$ |
| $5 x+9=44$ | $5 x-6=29$ | $10 x=70$ |  |
| $6 x=48$ | $6 x+14=48+14$ | $6 x-5=48-5$ | $5(6) x=5(48)$ |
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BLM 6.PR.14: Same As Reply Sheet A

| $3 x=3$ | $3 x+7=3+7$ | $3 x-3=3-3$ | $5(3 x)=5(3)$ |
| :---: | :---: | :---: | :---: |
|  | $3 x+7=10$ | $3 x-3=0$ | $15 x=15$ |
| $4 x=36$ | $4 x+4=36+4$ | $4 x-8=36-8$ | $3(4 x)=3(36)$ |
| $5 x=35$ | $5 x+9=35+9$ | $5 x-6=35-6$ | $2(5 x)=2(35)$ |
|  |  | $4 x-8=28$ | $12 x=108$ |
| $5 x+9=44$ | $5 x-6=29$ | $10 x=70$ |  |
| $6 x=48$ | $6 x+14=48+14$ | $6 x-5=48-5$ | $5(6) x=5(48)$ |
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BLM 6.PR.15: Same As Reply Sheet B

| $7 x=42$ | $7 x+9=42+9$ | $7 x-8=42-8$ | $3(7 x)=3(42)$ |
| :---: | :---: | :---: | :---: |
|  | $7 x+9=51$ | $7 x-8=34$ | $21 x=126$ |
| $8 x=56$ | $8 x+7=56+7$ | $8 x-7=56-7$ | $2(8 x)=2(56)$ |
|  | $8 x+7=63$ | $8 x-7=49$ | $16 x=112$ |
| $9 x=99$ | $9 x+5=99+5$ | $9 x-7=99-7$ | $3(9 x)=3(99)$ |
|  | $9 x+5=104$ | $9 x-7=92$ | $27 x=297$ |
| $8 x=12$ | $8 x+13=12+13$ | $8 x-9=12-9$ | $3(8 x)=3(12)$ |
|  | $8 x+13=25$ | $8 x-9=3$ | $24 x=36$ |

BLM 6.PR.16: Same As Record Sheet

| $3 x=3$ |  |  |  |  |
| :---: | :--- | :--- | :--- | :--- |
|  |  |  |  |  |
| $4 x=36$ |  |  |  |  |
|  |  |  |  |  |
| $5 x=35$ |  |  |  |  |
| $6 x=48$ |  |  |  |  |
| $7 x=42$ |  |  |  |  |
|  |  |  |  |  |
| $8 x=56$ |  |  |  |  |
| $9 x=99$ |  |  |  |  |
| $8 x=12$ |  |  |  |  |
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## BLM 6.SS.1.1: Angles



## BLM 6.SS.1.2: Reference Angles



## BLM 6.SS.1.3: Sum of Interior Angles of a Triangle

| Triangle <br> Name | Interior Angle Measures <br> $\left(+{ }^{\circ}+\ldots+\ldots\right.$ | Sum of Interior <br> Angles of Triangle |
| :---: | :---: | :---: |
|  |  |  |
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## BLM 6.SS.1.4: Sum of Interior Angles of a Quadrilateral

| Quadrilateral <br> Name | Interior Angle Measures <br> $\left({ }^{\circ}+\ldots+\ldots\right.$ <br> ${ }^{\circ}+\ldots$ <br> $\left.{ }^{\circ}\right)$ | Sum of Interior <br> Angles of Quadrilateral |
| :---: | :--- | :--- |
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## BLM 6.SS.2.3: Sides for Flexible Quadrilaterals

| Small for Parallelogram P 1 | Small for Parallelogram P 1 |
| :---: | :---: |
| Small for Parallelogram P 2 | Small for Trapezoid T 1 |
| Small for Parallelogram P 2 | Small for Trapezoid T 1 |
| Small for Parallelogram P 2 | Small for Trapezoid T 2 |
| Small for Parallelogram P 2 | Small for Trapezoid T 2 |

Medium for Trapezoid T 2

| Large for Parallelogram P 1 |
| :---: |
| Large for Parallelogram P 1 |
| Large for Trapezoid T 1 |
| Large for Trapezoid T 2 |
| Large for Trapezoid T 1 |

## BLM 6.SS.3.1: Polygon Collection: Set 1

## Equilateral



Isosceles


Scalene


## BLM 6.SS.3.1: Polygon Collection: Set 2

Regular Quadrilaterals


Irregular Quadrilaterals


## BLM 6.SS.3.1: Polygon Collection: Set 3

Regular Pentagons


Irregular Pentagons


## BLM 6.SS.3.1: Polygon Collection: Set 4

Regular Hexagons


Irregular Hexagons


## BLM 6.SS.3.1: Polygon Collection: Set 5

Regular Heptagons


Irregular Heptagons


## BLM 6.SS.3.2: Dolly Made a Garden (Perimeter)

Dolly's Mom had a garden. Dolly wanted to have a garden too. Mom gave Dolly five small rocks to build a garden. Dolly made a special garden. She placed a small rock on each corner of her garden. Dolly's garden was an irregular polygon. It had five sides. The length of each side was as follows: $205 \mathrm{~cm}, 70 \mathrm{~cm}, 95 \mathrm{~cm}, 120 \mathrm{~cm}$, and 125 cm .

What is the perimeter of Dolly's garden?

## BLM 6.SS.3.3: David's Playroom (Area)

David has a lot of toys. David's Dad told David that they will tile part of the basement floor, and David will be able to use the tiled area as his playroom.

David was watching as his Dad placed eight square tiles side-by-side. Then, his Dad placed a second row of tiles right along the first row. He continued until he had 10 rows of tiles.

David wanted to know how big each tile was. Dad gave him a measuring tape, and said "Each tile is the same size. Measure the length and width of one tile."

David measured the length of the tile. It was 30 cm long. The width looked the same, but he measured it to be sure. The width was also 30 cm long. David was happy with the new tiled area.

What is the area of David's tiled playroom?

## BLM 6.SS.3.4: Peter's Toy Box (Volume)

Peter wanted to build a toy box. Peter's Dad asked Peter how big he wanted to make his toy box. Peter thought about it.
"I have lots of blocks, cars, and trucks." said Peter.
"Put them all side-by-side." said Peter's Dad. "Now, let's figure out how much space they use up."

Peter looked at his toys, and said "How can we figure out how much space they use up?"

Peter's Dad said "Here is my measuring tape. We are going to use it to measure the length, the width, and the height that these toys take up."

Dad was measuring, and Peter wrote down the dimensions.
Here are the dimensions Peter recorded:
Length: 90 cm
Width: 70 cm
Height: 50 cm
What does the volume of the new toy box need to be so all the toys will fit in?

BLM 6.SS.4.1: Cards of Triangles \#1


## BLM 6.SS.4.2: Sorting of Triangles According to the Length of the Sides

| Triangle | Side a | Side b | Side c | Number of <br> Same Lengths <br> (3, 2, none) |
| :--- | :--- | :--- | :--- | :--- |
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BLM 6.SS.4.3: Cards of Triangles \#2

|  |  |
| :---: | :---: |
|  | G |
|  |  |
|  |  |

BLM 6.SS.4.4: Sorting of Triangles According to the Measure of Interior Angles

| Triangle | Angle A | Angle B | Angle C | Sort the Triangles and <br> Describe the Sorting Rule |
| :--- | :--- | :--- | :--- | :--- |
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## BLM 6.SS.4.5: Triangle Identification





## BLM 6.SS.4.6: Triangle Page



## BLM 6.SS.5.1: Polygons or Non-polygons



## BLM 6.SS.5.2: Equilateral Triangle



## BLM 6.SS.5.3: Regular Pentagon



## BLM 6.SS.5.4: Polygons: Regular and Irregular



## BLM 6.SS.5.5: Am I a Regular Polygon?

| Polygon | Kind | Justification |
| :--- | :--- | :--- |
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## BLM 6.SS.6.1: Shape and Image \#1

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|  |  |  |  | Shape | e QRS |  |  |  |  | Image Q | $Q^{\prime} \mathrm{R}^{\prime} \mathrm{S}^{\prime}$ |  |  |  |
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## BLM 6.SS.6.2: Shape and Image \#2



## BLM 6.SS.6.3: Envelope Shape



BLM 6.SS.7.1: Design


## BLM 6.SS.8.1: Matching Game



Match each corresponding ordered pair with its letter point.

| $(6,0)$ | $(18,3)$ | $(2,1)$ |
| :---: | :---: | :---: |
| $(5,8)$ | $(11,9)$ | $(14,3)$ |
| $(2,10)$ | $(7,19)$ | $(10,14)$ |
| $(1,20)$ | $(0,12)$ | $(17,20)$ |

## BLM 6.SS.8.2: Cartesian Plane \#1



## BLM 6.SS.8.3: Cartesian Plane \#2



## BLM 6.SS.9.1: Identification Game



## BLM 6.SS.9.2: Dizzy Pentagon




## BLM 6.SP.1.3: Prior Knowledge

Mini is doing a project on measurement. First, she measured every object that she possibly could. Then she started observing shadows. Mini noticed that the shadow of her dad's van was not the same size all the time, so she decided to measure it at different times of the day. Here are some of the measurements she took.
10 o'clock in the morning $\quad 30 \mathrm{~cm}$ long shadow

11 o'clock in the morning 15 cm long shadow
12 o'clock, noon
1 o' clock in the afternoon
2 o'clock in the afternoon
3 o'clock in the afternoon 45 cm long shadow
Mini made a line graph to show her data collection.

1. Make a line graph using Mini's shadow measurement data to show what you think Mini's graph looks like.
2. Mini used measurements to collect data for her graph. What other methods of collecting data do you know of?
3. Why do you think Mini used a line graph?
4. How long do you think the shadow was at 10:30 in the morning?
5. How long do you think the shadow was at $2: 30$ in the afternoon?
6. If you measured the shadow of your bicycle would the shadow measurements of your bicycle be shorter, the same size, or longer? Explain your answer.

## BLM 6.SP.1.4: Common Attributes of Line Graphs







## BLM 6.SP.1.5: Timmy's Mom Had a New Baby

Timmy's mom had a new baby. She had to take the baby to the doctor for monthly check-ups. Timmy went too.

Each time they had a visit, the doctor checked the baby, recorded the baby's height in the baby's medical file, and told mom the baby is doing well.

Timmy wanted to see what the doctor wrote about the baby. The doctor showed Timmy the baby's growth chart. This is what Timmy saw:

| Number <br> of <br> Months | 1 | 2 | 3 | 4 | 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Baby's <br> Height <br> $(\mathrm{cm})$ | 48 | 51 | 54 | 57 | 60 |

## BLM 6.SP.1.6: Grandma's Lilac Bush

| Number <br> of <br> Months | 0 | 1 | 2 | 3 | 4 | 5 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Height of <br> Lilac Bush <br> $(\mathrm{cm})$ | 40 | 50 | 60 | 70 | 80 | 90 |

## BLM 6.SP.1.7: Mom's Distance from Home



## BLM 6.SP.1.8: Questions for Data Collection \#1

1. You want to find out what is the most popular song among your classmates.
2. Your teacher wants to find out what is the average time his or her students spend studying at home.
3. Your basketball coach wants to find out which player on his team is the tallest.
4. You want to find out which was the hottest or coldest day in the last decade.
5. Your father wants to know which car is the best to buy based on how much gasoline it uses.
6. Your grandmother is planning a large family gettogether, and she wants to find out which four cakes are the family favourites.

## BLM 6.SP.1.9: Questions for Data Collection \#2

1. You want to find out which movie was the most popular in North America in the year 2000.
2. For your social studies assignment, your teacher wants you to find out who was the longest-living Prime Minister in Canada.
3. Your school principal wants to find out who has the highest marks in mathematics in the school.
4. Statistic Canada wants to collect data that will help them figure out the average family income.
5. Your gym teacher wants to find out which student can jump the highest.

## BLM 6.SP.1.10: Bobby Planted Peas

Bobby's grandmother was planting vegetables in her garden. Bobby also wanted to plant vegetables. Bobby's grandmother let Bobby plant some peas. Bobby was happy.

The following Sunday, when Bobby went to visit his grandmother, he was happy to see tiny little plants all over grandma's vegetable garden.

Grandma said "Bobby, Let's go and measure how tall your peas grew."

Grandma took a ruler, and Bobby and grandma put the ruler next to the peas. The tiny plant was 3 cm tall.

The second Sunday, they measured the peas. The tiny plant grew again. This time it was 6 cm tall.

The third Sunday, the tiny plant was 9 cm tall, and on the fourth Sunday it was 12 cm tall. On the fifth Sunday, when Bobby put the ruler next to his little plant, he shouted "Grandma, we can soon have fresh peas! My little plant is 15 cm tall."

## BLM 6.SP.1.11: Data or Not?

Jimmy's family enjoyed relaxing together after supper. Jimmy's mother loved to do crafts. Jimmy's father liked reading the newspaper, and Jimmy enjoyed playing with his toys.

One evening, Jimmy's father read in the daily newspaper that 30000 people are unemployed in Lobyville, 50000 people are unemployed in Sandytown, 15000 people are unemployed in Sunrizeton, and 38000 people are unemployed in Tulipville.

## BLM 6.SP.4.1: Spinner A



## BLM 6.SP.4.2: Spinner B



## BLM 6.SP.4.3: Spinner C



## BLM 6.SP.4.4: Spinner D



BLM 6.SP.4.5: Probability Bingo

|  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |

BLM 6.SP.4.6: Record Sheet \#1

| Student | Coin Toss \# | Prediction | Experimental Result |
| :---: | :---: | :---: | :---: |
|  | 1 |  |  |
|  | 2 |  |  |
|  | 3 |  |  |
|  | 4 |  |  |
|  | 5 |  |  |
|  | 6 |  |  |
|  | 7 |  |  |
|  | 8 |  |  |
|  | 9 |  |  |
|  | 10 |  |  |
|  | 1 |  |  |
|  | 2 |  |  |
|  | 3 |  |  |
|  | 4 |  |  |
|  | 5 |  |  |
|  | 6 |  |  |
|  | 7 |  |  |
|  | 8 |  |  |
|  | 9 |  |  |
|  | 10 |  |  |

## BLM 6.SP.4.7: Record Sheet \#2

| Group \# | Possible <br> Outcome | Theoretical <br> Probability | Tally of <br> Outcomes |
| :--- | :--- | :--- | :--- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

BLM 6.SP.4.8: Spinners


BLM 6.SP.4.8: Spinners (continued)


BLM 6.SP.4.8: Spinners (continued)


BLM 6.SP.4.8: Spinners (continued)


BLM 6.SP.4.8: Spinners (continued)


