دولة قطر

المجلس الأعلى للتعليم
SUPREME EDUCATION COUNCIL
هيئة التعليم

SCIENTIFIC ENGLISH

MATHEMATICS AND SCIENCE

GRADE 4

النشيد الوطني

قَسَمًا بِمَنْ رَفَعَ السَّمَـاءْ	قَسَمًا بِمَنْ نَشَرَ الضِّيَـاءْ
قَطَرٌ سَتَبْقَـى حُـرَّةً	تَسْمُو بِرُوحِ الأَوْفِيَـاءْ
سِيـرُوا عَلَـى نَهْـجِ الأُلَـى	وَعَلَى ضِيَاءِ الأَنْبِيَـاءْ
قَطَرٌ بِقَلْبِي سِيـرَةٌ عِـزٌّ	وَأَمْـجَادُ الإِبَاءْ
قَطَرُ الرِّجَـالُ الأَوَّلِينَ	حُمَاتُنَا يَوْمَ النِّـدَاءْ
وَحَمَائِـمٌ يَوْمَ السَّلَامْ	جَوَارِحٌ يَوْمَ الْفِـدَاءْ

لون علم دولة قطر العنابي والأبيض ، وتفصل بين اللونين تسعة رؤوس.

الأبيض : هو رمز السلام الذي يسعى له حكام قطر وأبناؤها.

العنابي : يرمز إلى الدماء المتخثرة، وهي دماء الشهداء من أبناء قطر الذين خاضوا معارك كثيرة في سبيل وحدة دولة قطر وخاصة في النصف الأخيرمن القرن التاسع عشر.

الرؤوس التسعة : ترمز إلى أن دولة قطر هي العضو التاسع في الإمارات المتصالحة من دول الخليج العربية.

علم دولة قطر

رؤية قطر الوطنية 2030

تهدف رؤيـة قطر الوطنية 2030 التي تمت المصادقة عليها بموجب القرار الأميري رقم 44 لسنة 2008، إلى تحويل قطـر بحلـول عام 2030 إلى دولة متقدمة قادرة على تحقيق التنمية المستدامة وعلى تأمين استمرار العيش الكريم لشعبها جيلا بعد جيل. حيث تحدد الرؤية الوطنيـة لدولة قطـر النتـائج التي يسعى البلد لتحقيقها على المدى الطويـل كما أنها تـوفـر إطارا عاما لتطوير إستراتيجيات وطنية شاملة وخطط تنفيذها.

وتستشرف الرؤية الوطنية الآفاق التنموية من خلال الركائز الأربع المترابطة التالية :

التنمية البشرية	التنمية الاجتماعية	التنمية الاقتصادية	التنمية البيئية

الركيزة الأولى ـ التنمية البشرية
الغايات المستهدفة :

سكان متعلمون :

- نظام تعليمي يرقى إلى مستوى الأنظمة التعليمية العالمية المتميزة ويزود المواطنين بما يفي بحاجاتهم وحاجات المجتمع القطري، ويتضمن:
  - مناهج تعليم وبرامج تدريب تستجيب لحاجات سوق العمل الحالية والمستقبلية.
  - فرصا تعليمية وتدريبية عالية الجودة تتناسب مع طموحات وقدرات كل فرد.
  - برامج تعليم مستمر مدى الحياة متاحة للجميع.

- شبكة وطنية للتعليم النظامي وغير النظامي تجهز الأطفال والشباب القطريين بالمهارات اللازمة والدافعية العالية للمساهمة في بناء مجتمعهم وتقدمه، تعمل على:
  - ترسيخ قيم وتقاليد المجتمع القطري والمحافظة على تراثه.
  - تشجيع النشء على الإبداع والابتكار وتنمية القدرات.
  - غرس روح الانتماء والمواطنة.
  - المشاركة في مجموعة واسعة من النشاطات الثقافية والرياضية

- مؤسسات تعليمية متطورة ومستقلة تدار بكفاءة وبشكل ذاتي ووفق إرشادات مركزية وتخضع لنظام المساءلة.
- نظام فعال لتمويل البحث العلمي يقوم على مبدأ الشراكة بين القطاعين العام والخاص بالتعاون مع الهيئات الدولية المختصة ومراكز البحوث العالمية المرموقة.
- دور فاعل دوليا في مجالات النشاط الثقافي والفكري والبحث العلمي.
- استقطاب التوليفة المرغوبة من العمالة الوافدة ورعاية حقوقها وتأمين سلامتها، والحفاظ على أصحاب المهارات المتميزة منها.

Contents

Mathematics

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SCIENTIFIC ENGLISH

MATHEMATICS

GRADE 4

GRADE 3 REVIEW

Task 1: Can you remember the keywords from grade 3?

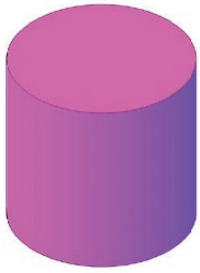
Write the correct keyword for each definition from the box below.

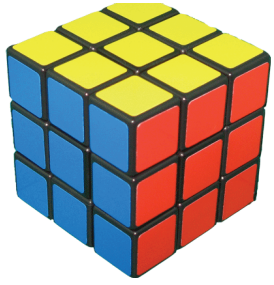
round equal to less than greater than

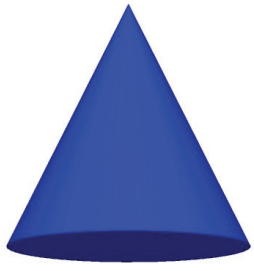
KEYWORD	DEFINITION	PICTURE or EXAMPLE
	12 is larger than 3.	$12 > 3$
	4 is smaller than 9.	$4 < 9$
	8 is the same as 4 plus 4.	$8 = 4 + 4$
	Change a number to the nearest 10.	$43 \longrightarrow 40$

Task 2: Use the keywords from the box below to label these pictures.

cube cylinder cone sphere







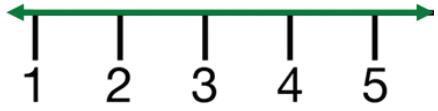
_____ _____ _____ _____

Task 3: MATCHING.

Help us draw lines to match the words with the correct numbers or pictures.

1. even number
2. odd number
3. fraction
4. number line

a) 3

b) 

c) 6

d) $\frac{1}{2}$

Task 4: MULTIPLE CHOICE!

Complete the sentences. Choose a, b, c or d.

1. In **addition**, the answer is called the .....

   a) difference **b)** quotient **c)** product **d)** sum

2. In **subtraction**, the answer is called the .....

   a) difference **b)** quotient **c)** product **d)** sum

3. In **multiplication**, the answer is called the .....

   a) difference **b)** quotient **c)** product **d)** sum

4. In **division**, the answer is called the .....

   a) difference **b)** quotient **c)** product **d)** sum

Task 3: MATCHING.

Help us draw lines to match the words with the correct numbers or pictures.

1. add
2. subtract
3. multiply
4. divide

a) −

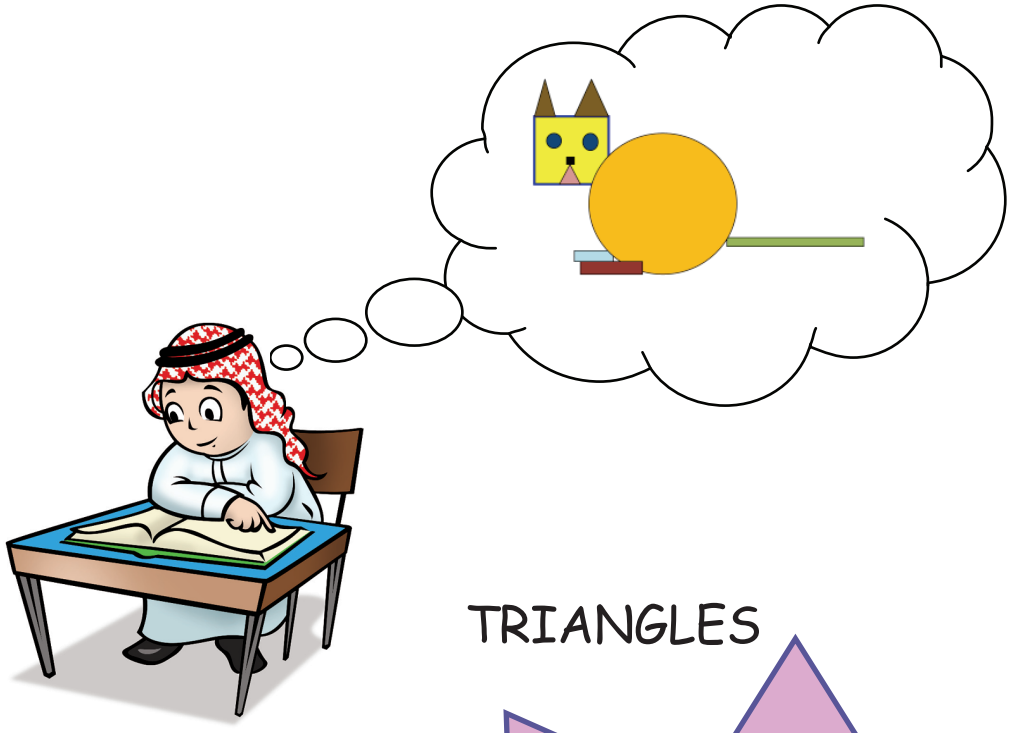
b) ÷

c) +

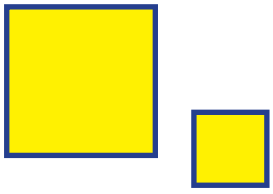
d) ×

Task 6: LET'S DRAW!

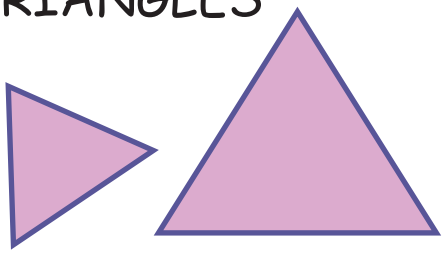
Draw a picture on the next page using the shapes below. Then label each shape.



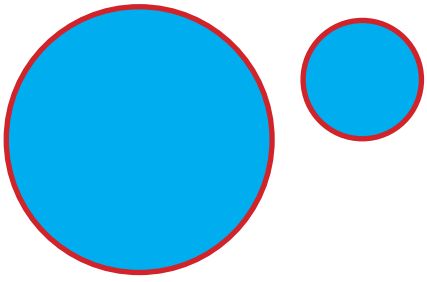
SQUARES



TRIANGLES



CIRCLES



RECTANGLES

NUMBERS AND PLACE VALUE

KEYWORDS: digit, place value, period, expanded form, standard form, word form

digits

0 1 2 3 4 5 6 7 8 9

thousands period				ones or units period		
hundred thousand	ten thousands	thousands	,	hundreds	tens	ones (units)
	1	2	,	5	7	8

twelve thousand five hundred seventy-eight

The symbols **0**, **1**, **2**, **3**, **4**, **5**, **6**, **7**, **8**, and **9** are called **digits**. They are used to write any whole number.

Look at the board.

The **8** is in the ones place.

The **7** is in the tens place.

The **5** is in the hundreds place.

The **2** is in the thousands place.

The **1** is in the ten thousands place.

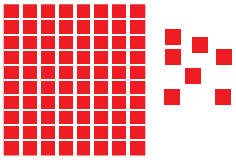
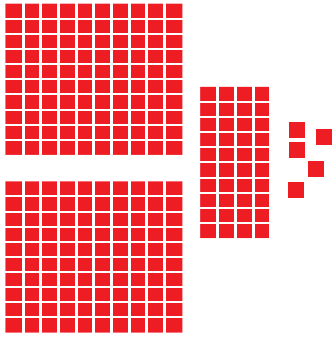
The place that a **digit** is in tells you how much that **digit** stands for. This is called **place value**.

Each place has 10 times the value of the place to its right.

The digits in large numbers are arranged in groups of three places:

hundreds, tens and ones.

These groups are called **periods**.

I see	I think	I write EXPANDED FORM	I write STANDARD FORM	I write or say WORD FORM
	8 tens 7 ones	80 + 7	87	eighty-seven
	3 tens 3 ones	30 + 3	33	thirty-three
	2 hundreds 4 tens 5 ones	200 + 40 + 5	245	two hundred forty-five

I can use words instead of digits to write any number. Words are longer, but they show how we say the numbers.

To say a 3-digit number, say the first digit on the left. Then say hundred. Last, say the number made by the two other digits.

So, **256** is **two hundred fifty-six**. **1,391** must be **one thousand three hundred ninety-one!** It's easy if I always start on the left.

I can say these numbers! Can you?

0	zero
5	five
9	nine
14	fourteen
20	twenty
26	twenty-six
30	thirty
45	forty-five
60	sixty
73	seventy-three
82	eighty-two
90	ninety
97	ninety-seven

Task 1:

Write the numbers in words.
Then say them to your partner in a sentence.

twelve fourteen seventeen ninety forty seventy

Write the numbers in words.

a) 17 ..... **b)** 70 .....

c) 12 ..... **d)** 40 .....

e) 14 ..... **f)** 90 .....

Say them to your partner in a sentence: 'I have **twelve** rooms in my house'.

Task 2:

Draw lines to match the two parts of the sentences.

1 digit	**a)** The way we usually write numbers. Example: 3,560
2 standard form	**b)** The symbols (0-9) used to write any whole number.
3 word form	**c)** 400 + 90 + 2
4 expanded form	**d)** The way we say our numbers. Example: forty-seven.
5 place value	**e)** The name given to each group of three digits on a place value chart.
6 period	**f)** The value given to a digit by its place in a number.

FUN WITH FLASHCARDS

CUT ✂---------- STUDY  PLAY 

digit

0 1 2 3 4

5 6 7 8 9

expanded form

400 + 20 + 9

place value

1,386

Digit	Place	Place Value
1	thousands	1000
3	hundreds	300
8	tens	80
6	Ones	6

standard form

429

period

thousands period				ones or units period		
hundred thousand	ten thousands	thousands	,	hundreds	tens	ones (units)
	1	2	,	5	7	8
	twelve thousand			five hundred	seventy-eight	

word form

four hundred twenty-nine

PLAY WITH FLASHCARDS

You Need: 2 sets of flashcards. Play with a partner.

1. Put one set of cards picture side up. Put the other set definition side up.
2. Take turns. Can you match the pictures to the correct definitions?

A way to write numbers that shows how much each digit is worth.	The symbols 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 that are used to write a whole number.
The way we usually write numbers.	The place of each digit in a number tells you how much that digit is worth.
The way we say numbers.	The name given to each group of three digits on a place-value chart.

PLACE VALUE

KEYWORDS: place value chart ones tens hundreds thousands millions

place value chart

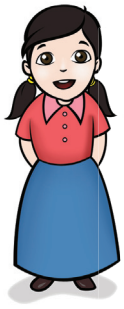
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
8	6	4	2	3	9	7
8,000,000	600,000	40,000	2,000	300	90	7

8,642,397

This week we have been learning about place value. A **place value chart** tells us how much each digit in a number is worth. Class, can you tell me about the different place values?

The **ones** place is the first place on the right.
In this number, 7 is in the ones place.

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
8	6	4	2	3	9	7
8,000,000	600,000	40,000	2,000	300	90	7



The **tens** place is to the left of the ones place. In this number, **9** is in the tens place.

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
8	6	4	2	3	9	7
8,000,000	600,000	40,000	2,000	300	90	7

The **hundreds** place is to the left of the tens place. In this number, **3** is in the hundreds place.

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
8	6	4	2	3	9	7
8,000,000	600,000	40,000	2,000	300	90	7

The **thousands** place is to the left of the hundreds place. In this number, **2** is in the thousands place.

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
8	6	4	2	3	9	7
8,000,000	600,000	40,000	2,000	300	90	7

The **millions** place is to the left of the hundred thousands place. In this number, **8** is in the millions place.

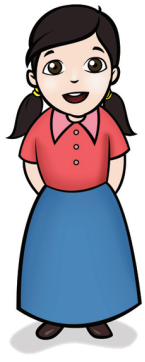
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
8	6	4	2	3	9	7
8,000,000	600,000	40,000	2,000	300	90	7

Task 1:

Use the words in the box below to label the place value of the underlined digit in each number.

ones	tens	hundreds	thousands	millions

1. 1,8<u>7</u>6 — eight <u>hundreds</u>
2. 9<u>5</u>7 — five .....
3. 3<u>6</u> — six .....
4. <u>3</u>,425 — three .....
5. <u>2</u>,000,910 — two .....



Task 2: Puzzle Time!

Look at this number: 8,642,397

Use the clues to fill in the puzzle.

Across

3) The place value of the digit **7**.

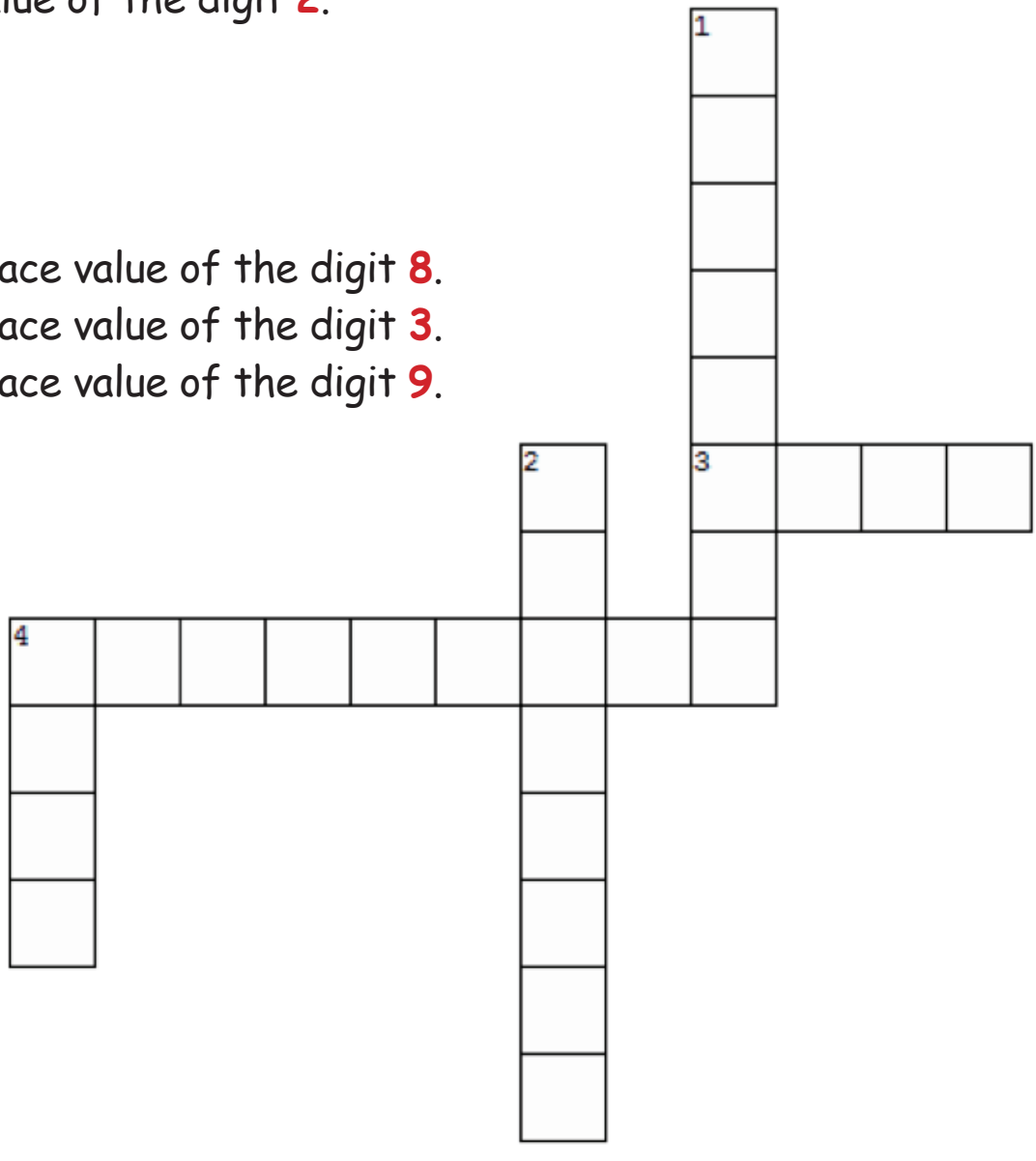
4) The place value of the digit **2**.

Down

1) The place value of the digit **8**.

2) The place value of the digit **3**.

4) The place value of the digit **9**.



FUN WITH FOLDABLES

CUT ✂---------- FOLD | STUDY  PLAY 

FUN WITH WORDS: CAN YOU SAY IT?

1. STUDY. Look at a number.
Open the flap and read the number three times.
(Repeat for every number)

2. PLAY. Choose a number. Say the number in words.
Open the flap and check your answer.
You get 5 points for every correct response!

97

324

1560

74,801

862,045

2,900,603

(BACK OF FOLDABLE) (FOLD LINE) (FRONT OF FOLDABLE)

NINETY SEVEN

THREE HUNDRED
TWENTY-FOUR

ONE THOUSAND FIVE HUNDRED SIXTY

SEVENTY-FOUR THOUSAND
EIGHT HUNDRED ONE

EIGHT HUNDRED
SIXTY-TWO THOUSAND
FORTY-FIVE

TWO MILLION NINE HUNDRED THOUSAND
SIX HUNDRED THREE

(INSIDE OF FOLDABLE)

COMPARE AND ORDER NUMBERS

KEYWORDS: compare order greater than > less than < equal to = number line

compare

526 > 487

321 < 325

298 = 298

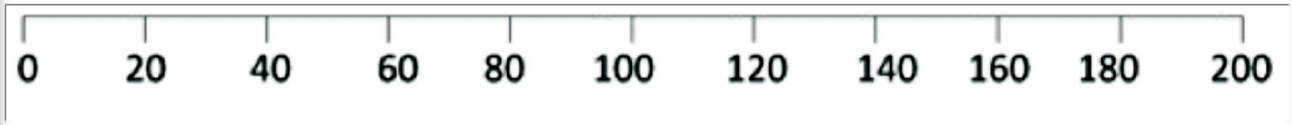
order

635, 642, 647, 689, 699

or

699, 689, 647, 642, 635

number line



This week, we have been learning more about **numbers**. What does it mean to compare numbers?

I know! When we **compare** numbers, we decide which number is larger and which is smaller.

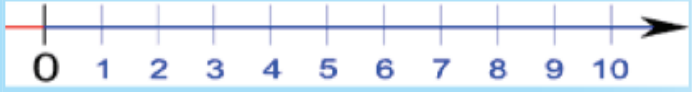
COMPARE AND ORDER NUMBERS

We compare numbers by describing them as **less than**, **greater than** or **equal to** each other. In math, instead of writing the words, we can use these symbols:

< less than > greater than = Equal to

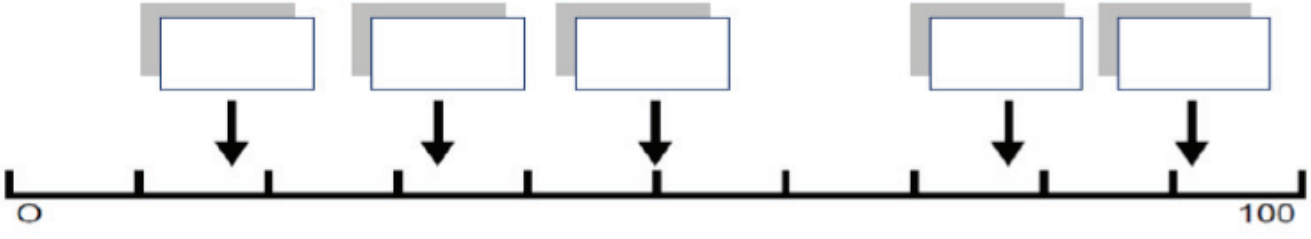
After we compare the numbers, we can **order** them or put them in place according to some rule.

For example, we can order numbers from least to greatest on a **number line**.



Task 1:

Order the numbers 78, 17, 50, 32, and 92 on the number line.



Task 2:

Compare the numbers. Write the words and the symbols from the boxes below.
The first one is done for you.

=	>	<	is greater than	is less than	is equal to

4 > 1 (is greater than)

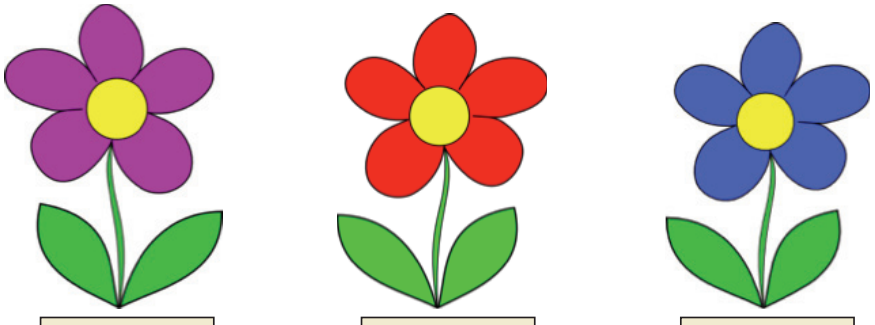
7 ☐ 12

24 ☐ 46

89 ☐ 89

Task 3:

Draw lines to match each bee to the flower with the words for her symbol.



less than | greater than | equal to

QUICK VOCABULARY CHECK

Each card shows the definition or an example of a key vocabulary word. Write each word from the box below on the card with the matching definition or example.

digit expanded form word form standard form
place value period number line equal to =
greater than > less than <

_____

24,000 25,000 26,000

_____

23,042 ◯ 23, 000

_____

Example: 83,104

_____

The value given to a digit by its position in a number.

_____

A symbol (0-9) used to write a whole number.

_____

The name given to each group of 3 digits on a place value chart.

_____

Example:
80,000 + 300 + 100+ 4

_____

34,842 ◯ 43, 842

_____

Example:
eighty-three thousand one hundred four

_____

44,204 ◯ 44,204

ROUNDING

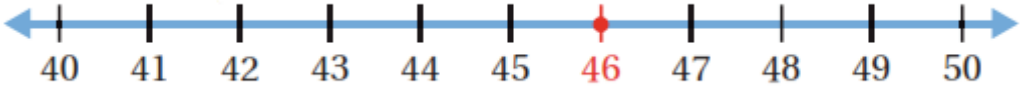
KEYWORDS: round rounding nearest ten nearest hundred

Good morning, class! Today we are talking about **rounding**. When we **round** a number, we change it to a number that is easier to work with.

In grade three, we rounded numbers to the **nearest ten**. Nearest means closest. On the board, 19 is closer to 20 than it is to 10. So, the **nearest ten** is 20.

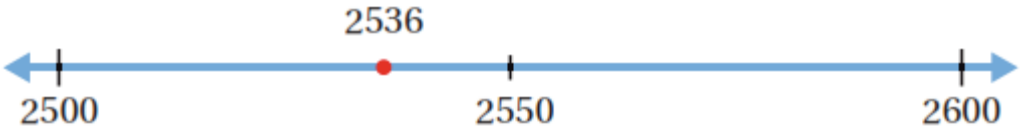
We can also round numbers to the **nearest hundred**. 219 is closer to 200 than it is to 300. So, the **nearest hundred** is 200.

Task 1: **Choose the correct answer.**



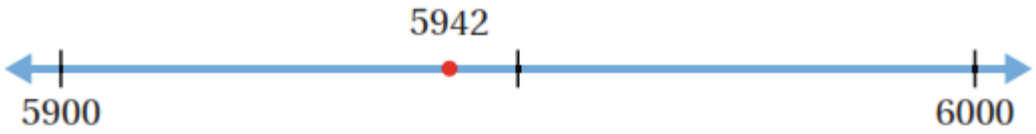
1 46 rounded to 50 is rounded to the ....

a) nearest ten b) nearest hundred



2 2536 rounded to 2500 is rounded to the ....

a) nearest ten b) nearest hundred



3 5942 rounded to 5900 is rounded to the ....

a) nearest ten b) nearest hundred

4 836 rounded to the nearest ten is .....

a) 800 b) 840

5 7654 rounded to the nearest ten is .....

a) 7650 b) 7700

6 2809 rounded to the nearest hundred is .....

a) 2810 b) 2800

Task 2:

Look at the whiteboard on the first page of this lesson.

Use the whiteboard to fill in the blanks.

If I want to visit London, I will fly ..... km from Doha.

..... km rounded to the nearest ten is ..... km.

..... km rounded to the nearest hundred is ..... km.

HOMEWORK

Choose a city in another country that you and your family would like to visit.

Go to this website: http://www.travelmath.com/flying-distance

Fill in the blanks on the website with Doha and the city you want to visit.

Now complete this form:

We want to visit ..... . It is ..... km from Doha.

..... km rounded to the nearest ten is ..... km.

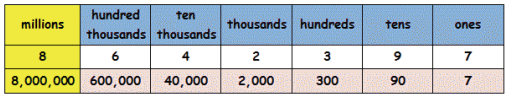
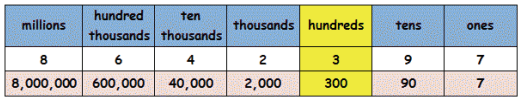
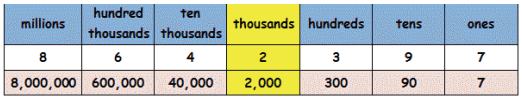
..... km rounded to the nearest hundred is ..... km.

(Can you read this to someone at home?)

Can you remember these keywords from Unit 1?

Write the correct keyword from the box below for each definition.

compare order hundreds thousands millions

KEYWORD	DEFINITION	PICTURE or EXAMPLE
	The place to the left of the hundred thousands on a place value chart.	 8,642,397
	To put in place according to some rule.	235, 240, 245, 250, 255
	The place to the left of the tens on a place value chart.	 8,642,397
	To decide if a number is larger, smaller or equal to another number.	589 > 364
	The place to the left of the hundreds on a place value chart.	 8,642,397

ADDITION AND SUBTRACTION 1

KEYWORDS: addition subtraction sum difference mentally

mentally

I can add or subtract in my head, mentally!

addition

52 + 37 = 89 ← sum

subtraction

52 - 37 = 15 ← difference

Good morning, class. Today we will be talking about addition and subtraction. Who can tell us about addition?

I can, Mrs. Amna. In **addition**, we put two or more numbers together to make a new number. The answer is called the **sum**.

I can find the sum of 52 plus 37 **mentally**, in my head! I don't have to use pencil and paper or a calculator.

Subtraction is my favorite. In **subtraction**, you take one number away from another. The answer in subtraction is called the difference. Can anyone find the **difference** of 155 minus 140?

That's easy! I can find the **difference mentally**. 155 minus 140 is 15.

Task 1:

Match the words with the correct example or definition.

1	addition	**a)**	The answer in addition.
2	sum	**b)**	320 + 469
3	subtraction	**c)**	adding or subtracting in your head.
4	difference	**d)**	9437 - 325
5	mentally	**e)**	The answer in subtraction.

Task 2: **Fill in the blanks to complete each sentence.**
Use the keywords from the box below.

mentally	difference	sum	addition	subtraction

1. Twenty-five plus ninety is an example of ..... .
2. The ..... is the answer in subtraction.
3. I can add numbers in my head, ...
4. One thousand minus fifty is an example of ..... .
5. The ..... of sixty plus forty is one hundred.

Task 3: **LET'S TALK!**

Read each of the sentences in Task 2 to a partner.

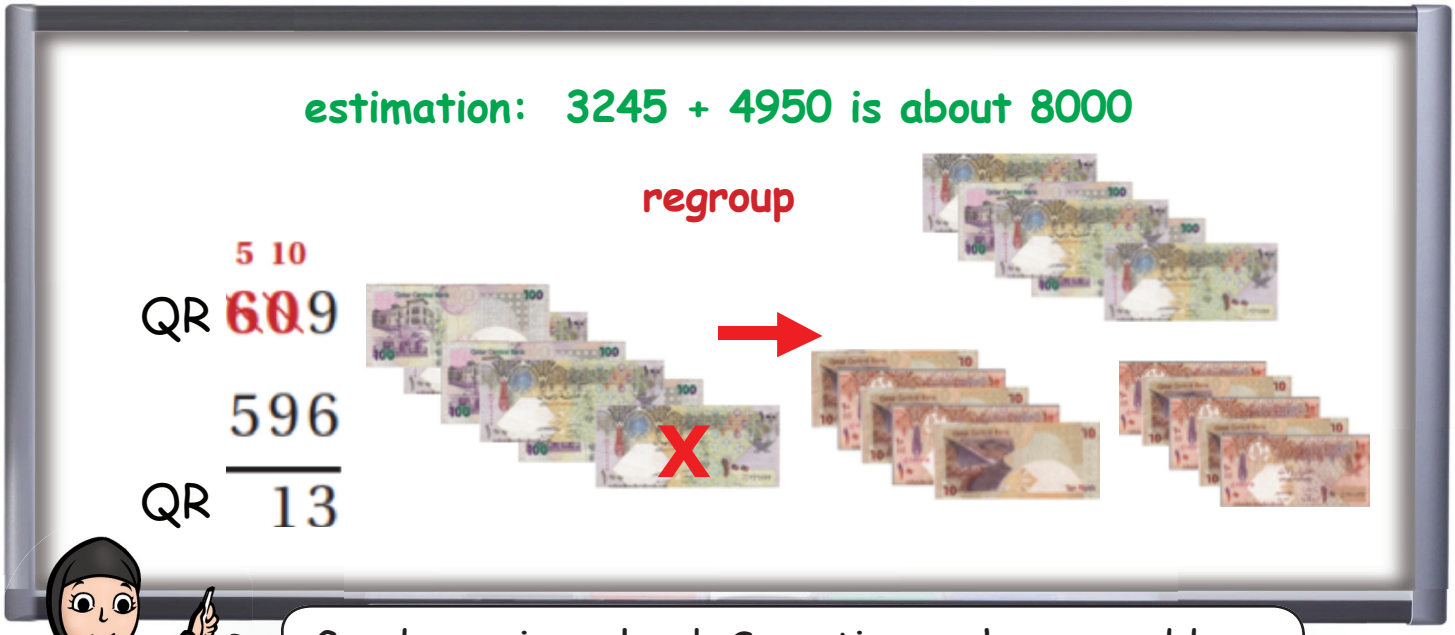
TODAY'S MATHEMATICS KEYWORDS

Look at the keywords on this chart. Write an example or draw a picture for each word in the box below.

KEYWORD	DEFINITION	PICTURE or EXAMPLE
sum	The answer in addition.	
mentally	Adding or subtracting numbers in your head.	
subtraction	Taking one number away from another number.	
difference	The answer in subtraction.	
addition	To put two or more numbers together.	

ADDITION AND SUBTRACTION 2

KEYWORDS: estimation regroup inverse operation number sentence



Good morning, class! Sometimes when we add or subtract we use estimation. **Estimation** is finding a number that is close to an exact value. An estimate is *about* how much.

I can tell about how much 3245 plus 4950 is by rounding both numbers. 3000 plus 5000 is 8000. That's estimation.

On the whiteboard, there is an example of regrouping numbers. What does it mean to regroup?

When you **regroup**, you use place value to exchange equal amounts to rename a number.

So, we change QR600 to QR500 plus ten QR10 notes.

KEYWORDS: estimation regroup inverse operation number sentence

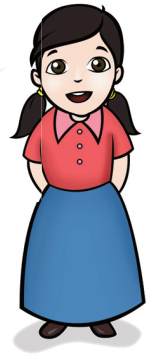
INVERSE OPERATION

$$\begin{array}{r} 45609 \\ -\ 41596 \\ \hline 4013 \end{array} \qquad \begin{array}{r} 41596 \\ +\ 4013 \\ \hline 45609 \end{array}$$

NUMBER SENTENCE

3000 + 2000 = 5000
5000 – 2000 = 3000
5000 > 3000
2000 < 3000

Did you know that addition is the **inverse operation** of subtraction. That means they undo each other. Addition and subtraction are opposites.



I know! Three thousand plus two thousand is the inverse of five thousand minus two thousand.

I can make a number sentence. A **number sentence** uses numbers and the =, < or > sign.
3000 + 2000 = 5000 is a number sentence.

I understand! Another number sentence is 5000 > 3000.
[Five thousand is greater than three thousand.]

Task 1: MULTIPLE CHOICE!

Complete the sentences. Choose a, b, c or d.

1. Addition is the .... of subtraction.

   a) estimation **b)** regroup

   c) inverse operation **d)** number sentence

2. A/An .... uses numbers and a =, < or > sign .

   a) estimation **b)** regroup

   c) inverse operation **d)** number sentence

3. A/An ..... is a number that is close to an exact value.

   a) estimation **b)** regroup

   c) inverse operation **d)** number sentence

4. You ..... when you use place value to exchange equal amounts to rename a number.

   a) estimation **b)** regroup

   c) inverse operation **d)** number sentence

Task 2: MULTIPLE CHOICE!

Match each word to the example.

1 regroup	**a)** 47 + 26 = 73
2 number sentence	**b)** 7 – 3 = 4 4 + 3 = 7
3 estimation	**c)** one 10 ⇒ 10 ones
4 inverse operation	**d)** 42 – 31 is about 10

GAME TIME!

Can you remember Unit 1 and Unit 2 words?
Look at the keywords on the bottom of the page. Write one word in each box. Listen as your teacher reads out a definition. Put an X on the box if you have the matching word. Three in a row is BINGO!

	BINGO	

addition	subtraction	sum	difference	mentally
estimation	regroup	round	digit	equal to
standard form	expanded form	inverse operation	number sentence	greater than
thousands	million	period	word form	comparing

MULTIPLICATION AND DIVISION

KEYWORDS: multiplication factor product division quotient multiplication sentence division sentence

Sentence

MULTIPLICATION

346 x 100 = 34,600

70 ← factor
X 8 ← factor
560 ← product

DIVISION

34,600 ÷ 100 = 346

quotient

$$9\overline{)63} \quad 7$$

Good morning, class! Today we will be talking about multiplication and division. Who can tell us about multiplication and division?

Well, Mrs. Amna, I know that **multiplication** is repeated addition and that the answer is called the **product**. We can say eight times seventy is five hundred sixty.

I know that we multiply **factors** together to find the product. Factors can divide into another number exactly. 70 and 8 are factors of 560.

I see a **multiplication sentence** and a **division sentence** on the board. We can tell they are number sentences because they both have an equal sign.

In division, we split the larger number up into the same number of equal groups as the smaller number. The answer we get is called the **quotient**.

Task 1:

Draw lines to match the keyword with the picture or example.

1 multiplication	**a)** 34,600 ÷ 100 = 346
2 division	**b)** 20 x 3 = 60
3 factor	**c)** 346 x 100 = 34,600
4 product	**d)** 810 ÷ 9 = 90
5 quotient	**e)** 20 x 3 = 60

Task 2:

Use the keywords in the box below to complete each sentence.

multiplication factor product division quotient

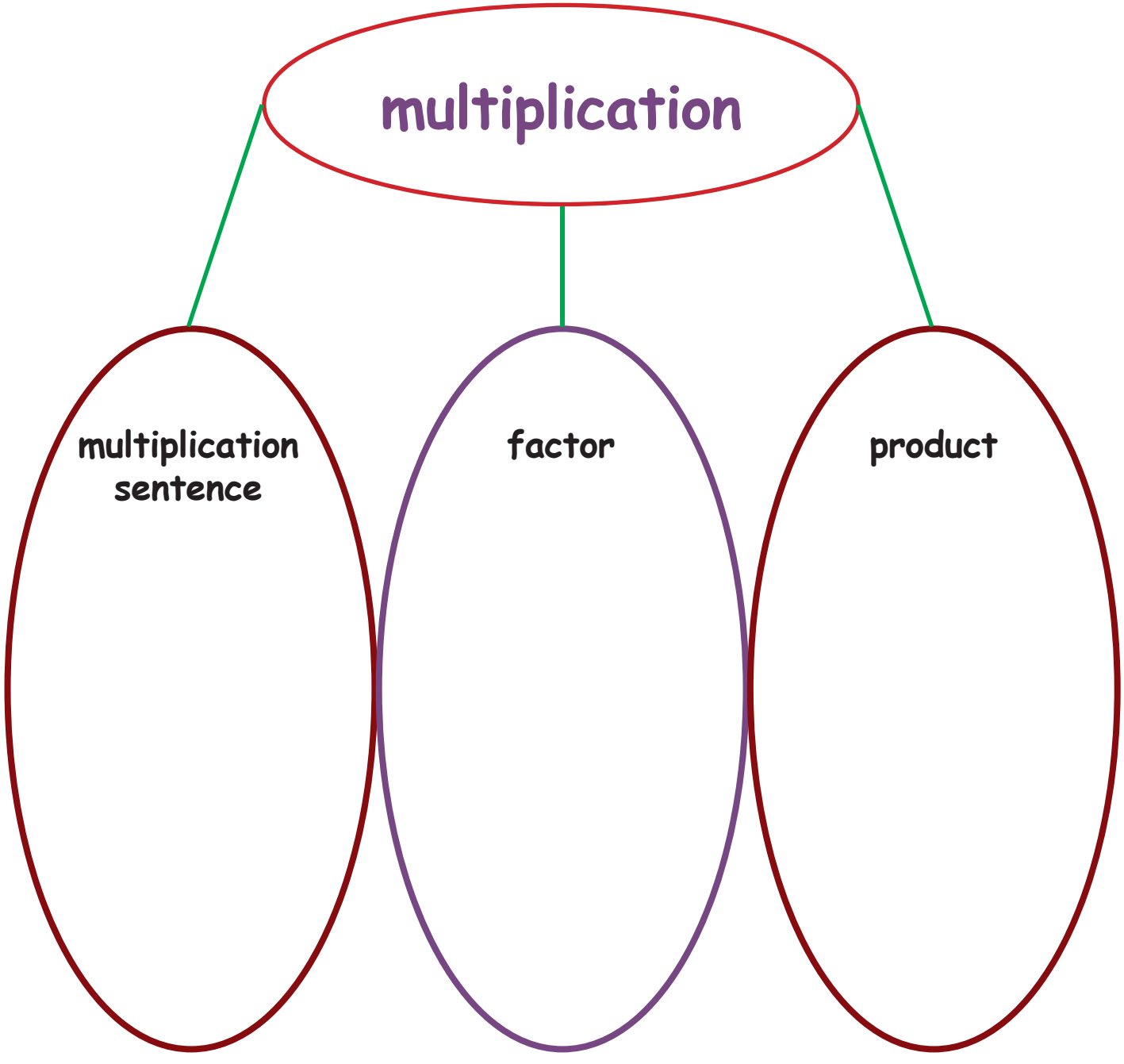
1. If I split 45 things into 9 equal groups I'm doing .....
2. A number that will divide exactly into another number is a .....
3. The answer in multiplication is called the .....
4. Fifty times two is an example of a ..... problem.
5. The ..... is the answer in division.

Task 3: LET'S TALK!

Read each sentence in Task 2 to a partner.

Task 4:

Complete the bubble map. Write an example or draw a picture about each word.



Task 5:

Unscramble the letters to write a keyword on each line.

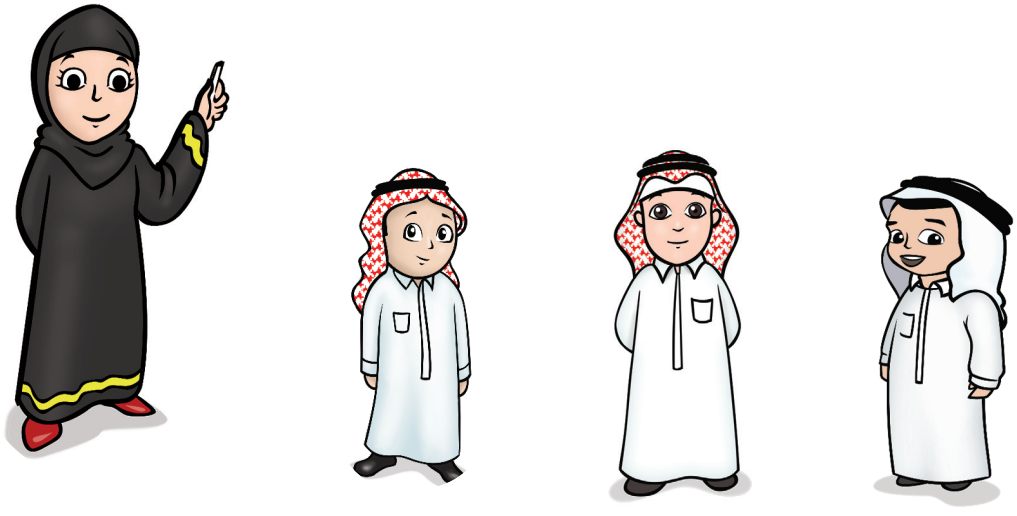
product quotient factor division

idvsiion .....

ctrpoud .....

fcrota .....

utiqneot .....



MY Foldable

FOLDABLES Follow the steps on the back to make your Foldable.

Multiples	4	5	6	12	15	24	27
Factors	4	5	6	12	15	24	27

FOLDABLES

Study Organizer

Multiples

Factors

FACTORS AND MULTIPLES

KEYWORDS: multiple common factor prime number composite number

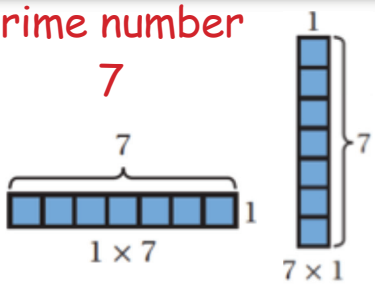
multiple
× 7

7	14	21	28	35	42	49	56	63	70

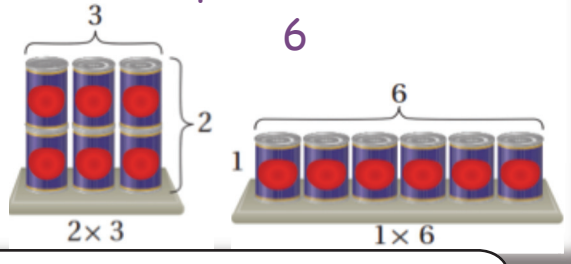
common factor

factors of	even factors	odd factors
18	2 6 18	1 3 9
20	2 4 10 20	1 5

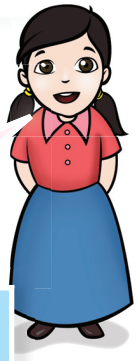
prime number
7



composite number
6



Good morning, class! Today, we are going to learn more about factors and multiples. Do you see the multiples of 7 on the board, Nouf?



Yes, Mrs. Amna. I see that a **multiple** is the product of that number and any whole number. Sara, do you know what common factors are?

Yes, I do. **Common factors** are the factors of two or more numbers that are the same. On the whiteboard, the common factors of 18 and 20 are 1 and 2.

I see a prime number on the board. A **prime number** has only two factors: 1 and the number. 7 is prime.

Then a **composite number** must be any number that has more than two factors. Like 6.

Task 1: **Unscramble each word to complete the sentences. Use a word from the box below.**

multiple	common factor	prime number	composite number

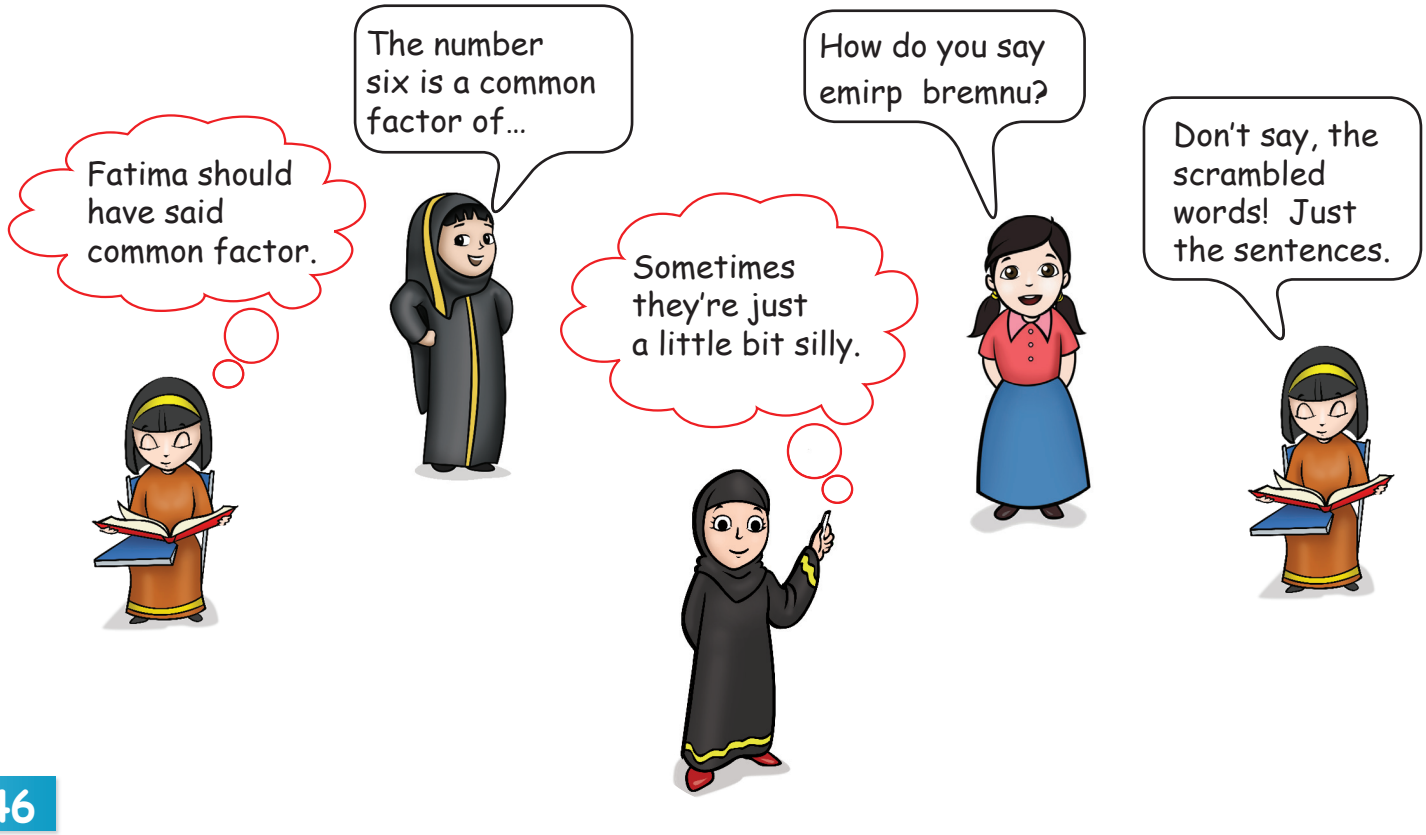
1. emirp bremnu
   The number 7 has only 2 factors. It is a _____.

2. putmille
   35 is a _____ of 5.

3. simpoocet rembun
   A _____, like 12, has more than two factors.

4. nomcom tarfoc
   The number 6 is a _____ of 12 and 18.

Task 2: **Read each of the sentences in Task 1 to a partner.**



Task 3:

Help each butterfly find its flower by drawing lines to match each vocabulary word with its defintion.

prime number

composite number

common factor

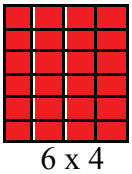
A factor that is the same for two or more numbers.

A number that has only 2 factors.

A number that has more than 2 factors.

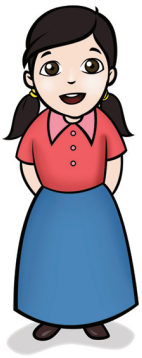
Name_____ HOMEWORK Date: _____

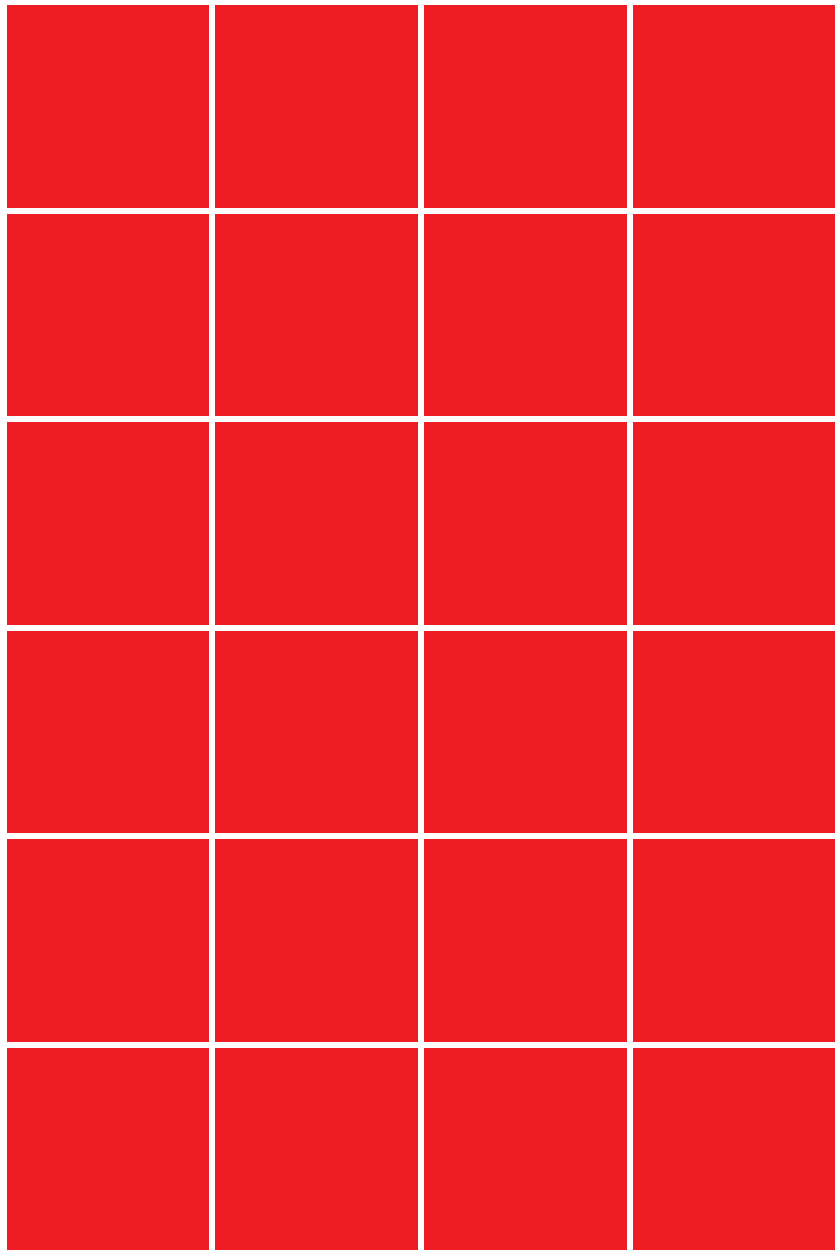
FIND THE FACTORS OF 24

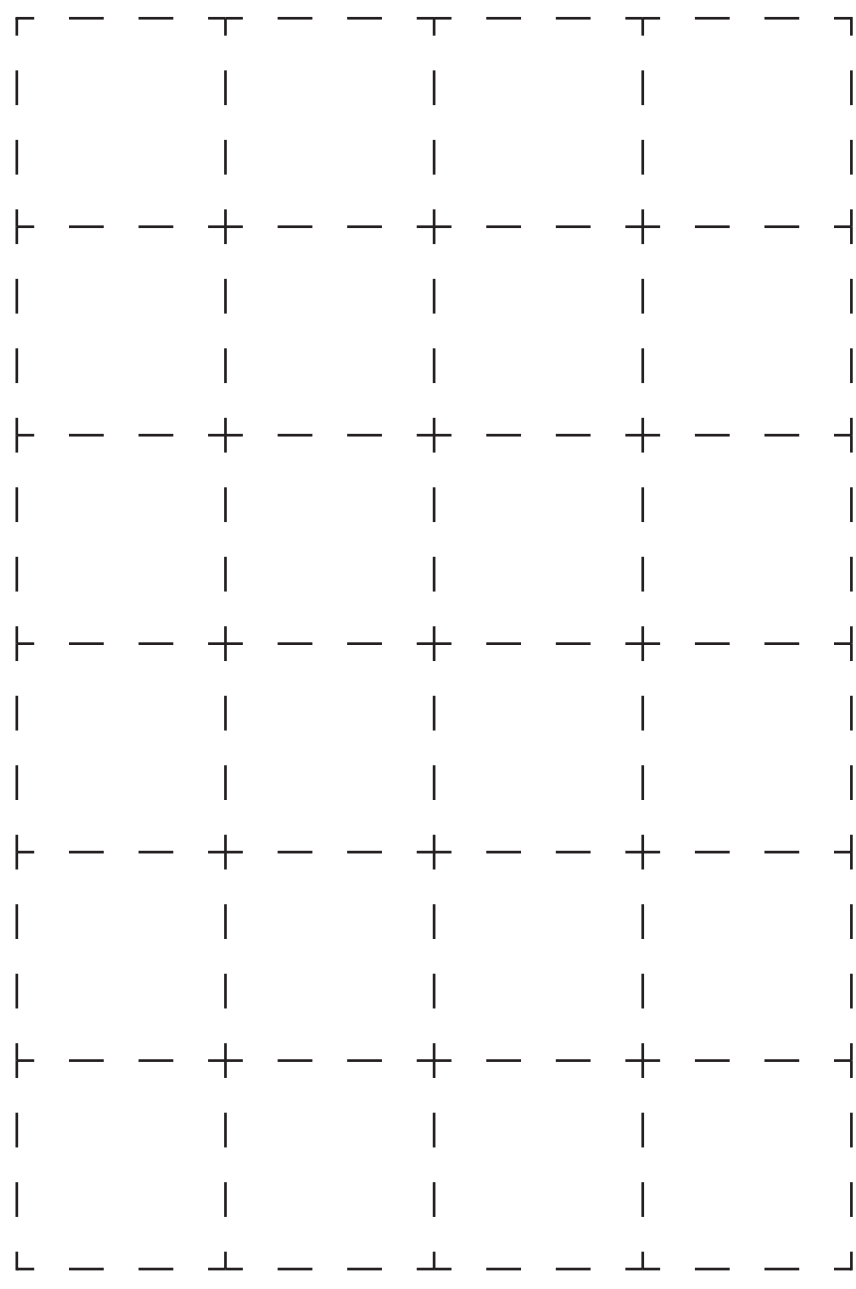

6 x 4

1. Cut out the 24 squares below.
2. Make arrays with the squares to find factors of 24.
3. The factors of 24 are..... .
4. Using arrays, show your parents the difference between prime and composite numbers.

Extra Credit! Use the squares to find all the numbers less than 24 that are prime numbers. The prime numbers < 24 are.....

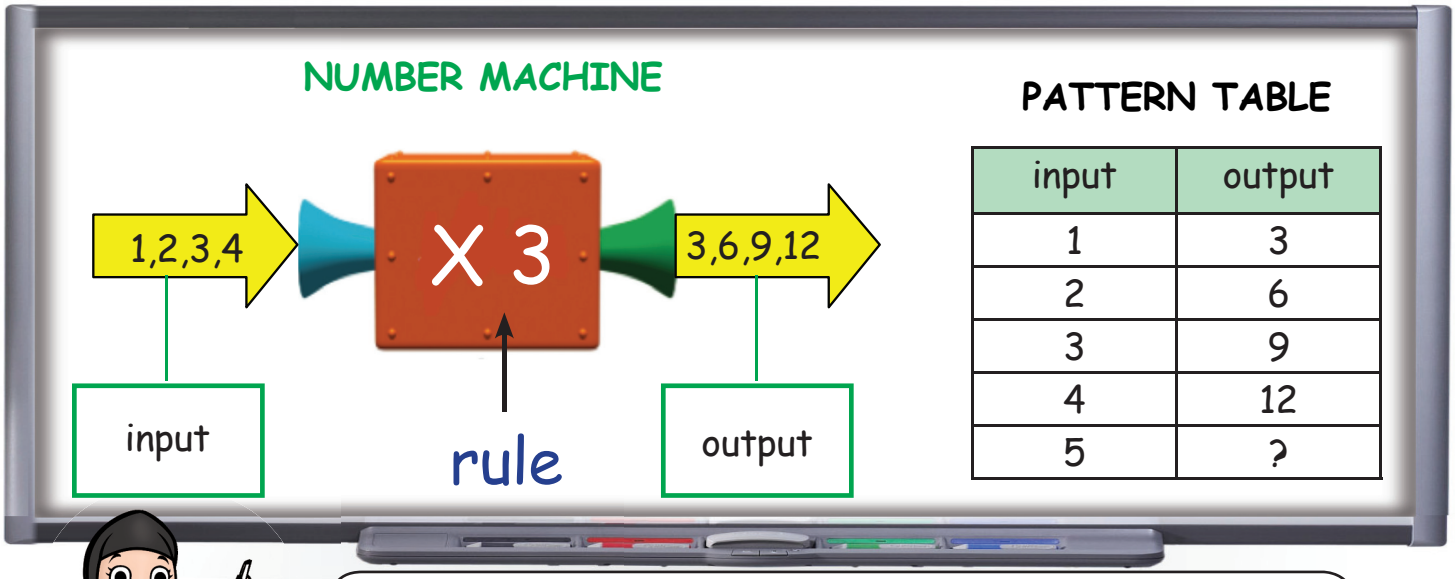




NUMBER PATTERNS

KEYWORDS: pattern rule input output number machine pattern table



PATTERN TABLE

input	output
1	3
2	6
3	9
4	12
5	?

Hello, class! This lesson is about number **patterns**. A number pattern is a list of numbers that follow a rule. Can you find a number pattern on the whiteboard?

Yes, Mrs. Amna. I see the pattern 3,6,8,12,15 coming out of the number machine. The **number machine** uses a rule to change each number going in to a new number.

Yes, the numbers going into the number machine are called the **input**, and the numbers coming out are called the **output**.

The **rule** shows how the machine changes the input to make the output.

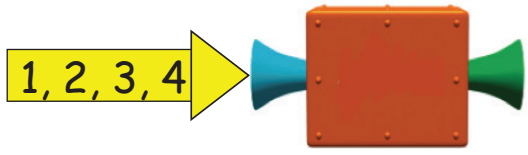
We can organize the input and output in a **number table**. This makes it easy to find the rule.

Task 1:

Draw lines to match the keywords to the pictures or examples.

1. pattern
2. rule
3. input
4. output
5. number machine
6. pattern table

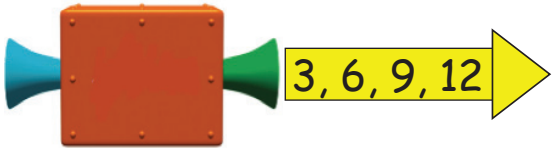
a) x 3

b) 

c) 3,6,9,12,15

d)

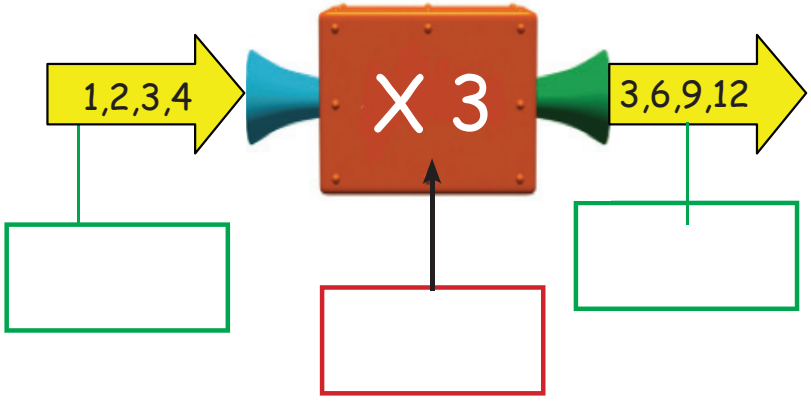
input	output
1	3
2	6
3	9

e) 

f) 

Task 2:

Label the number machine.



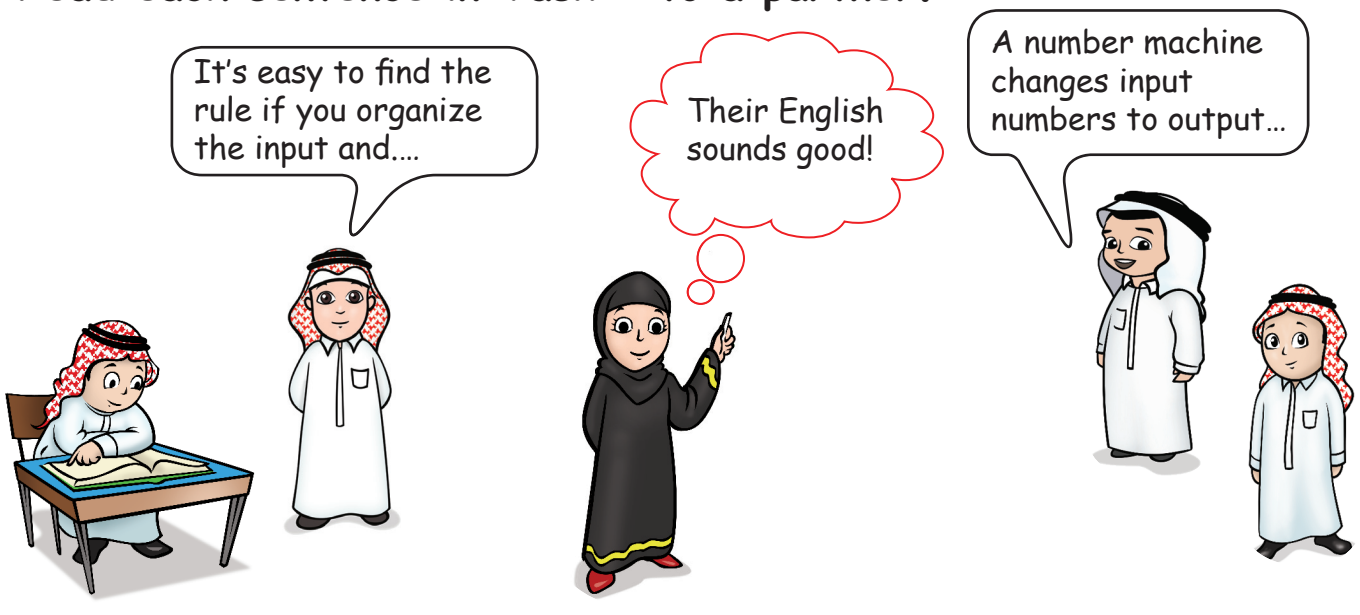
Task 3: **Use the keywords in the box below to complete each sentence.**

pattern rule input output number machine pattern table

1. A/An .... uses a rule to change each number going in to a new number.
2. Numbers going into a number machine are called the .....
3. A/An ..... is a series of numbers that follows a rule.
4. It's easy to find the rule if you organize the input and output in a/an ....
5. The ..... is the numbers that come out of a number machine.
6. A number machine changes input numbers to output numbers using a/an .....

Task 4: **LET'S TALK!**

Read each sentence in Task 2 to a partner.



GAME TIME!

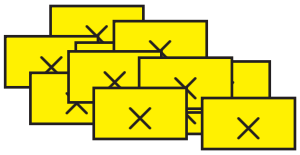
Let's play Concentration to review Unit 3 words.

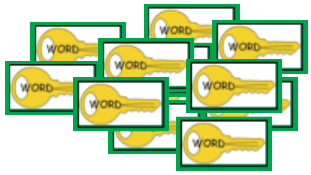
Follow the directions below to make your game and play Concentration.

1. Cut out the cards below.
2. Put them in two groups: Cards with 

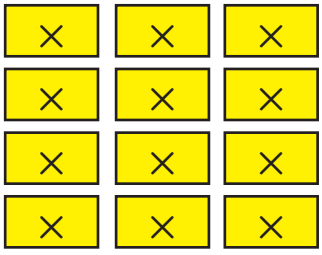
on the back, and cards with 

on the back.
3. Mix up the cards in each group. Make sure that only the backs of the cards are showing.

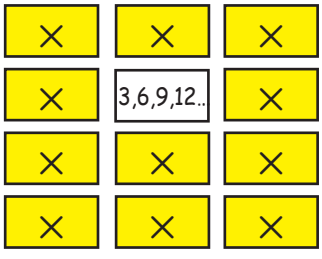


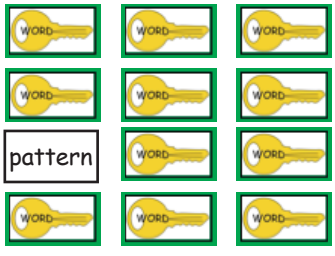


4. Arrange the cards in each set into a 4 x 3 array.



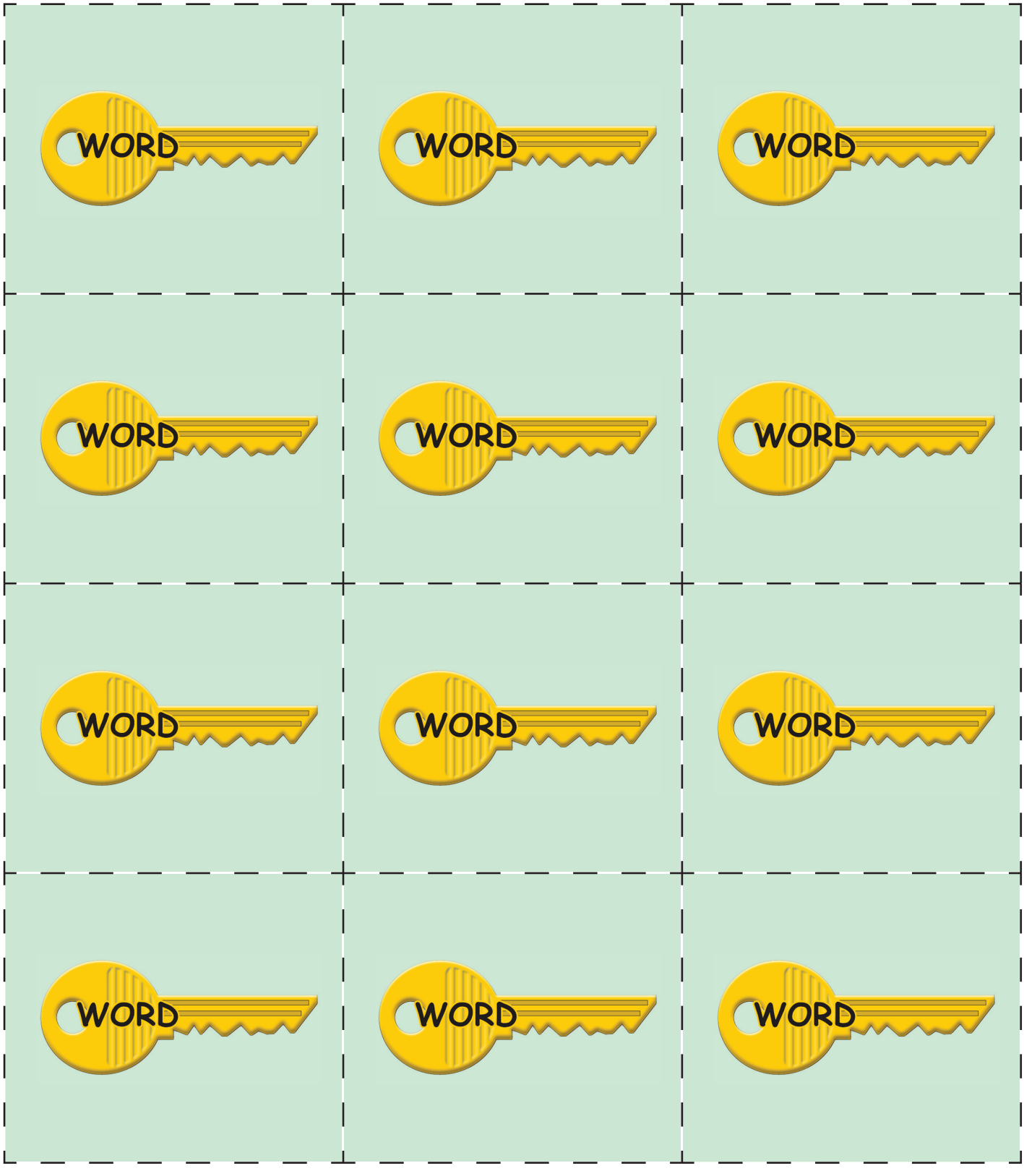
5. Take turns. Turn one card over in each group. If the Keyword card and the example card match, take the cards. If they do not match, return the cards to their place. (Hint: Study before you play)





6. The person with the most cards at the end of game wins.

pattern	rule	input
output	prime number	composite number
multiplication	division	product
quotient	factor	common factor


WORD
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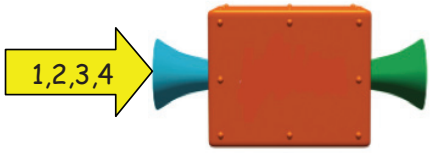


x3

3,6,9,12,15...

6 (factors 1,2,3,6)

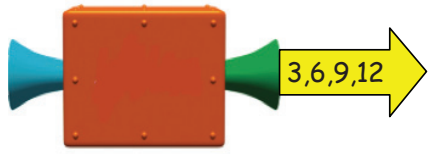
10 (factors 1,2,5,10)

15 (factors 1,3,5,15)

7 (factors 1, 7)

13 (factors 1,13)

19 (factors 1,19)



$7 \times 8 = 56$

$32 \div 8$

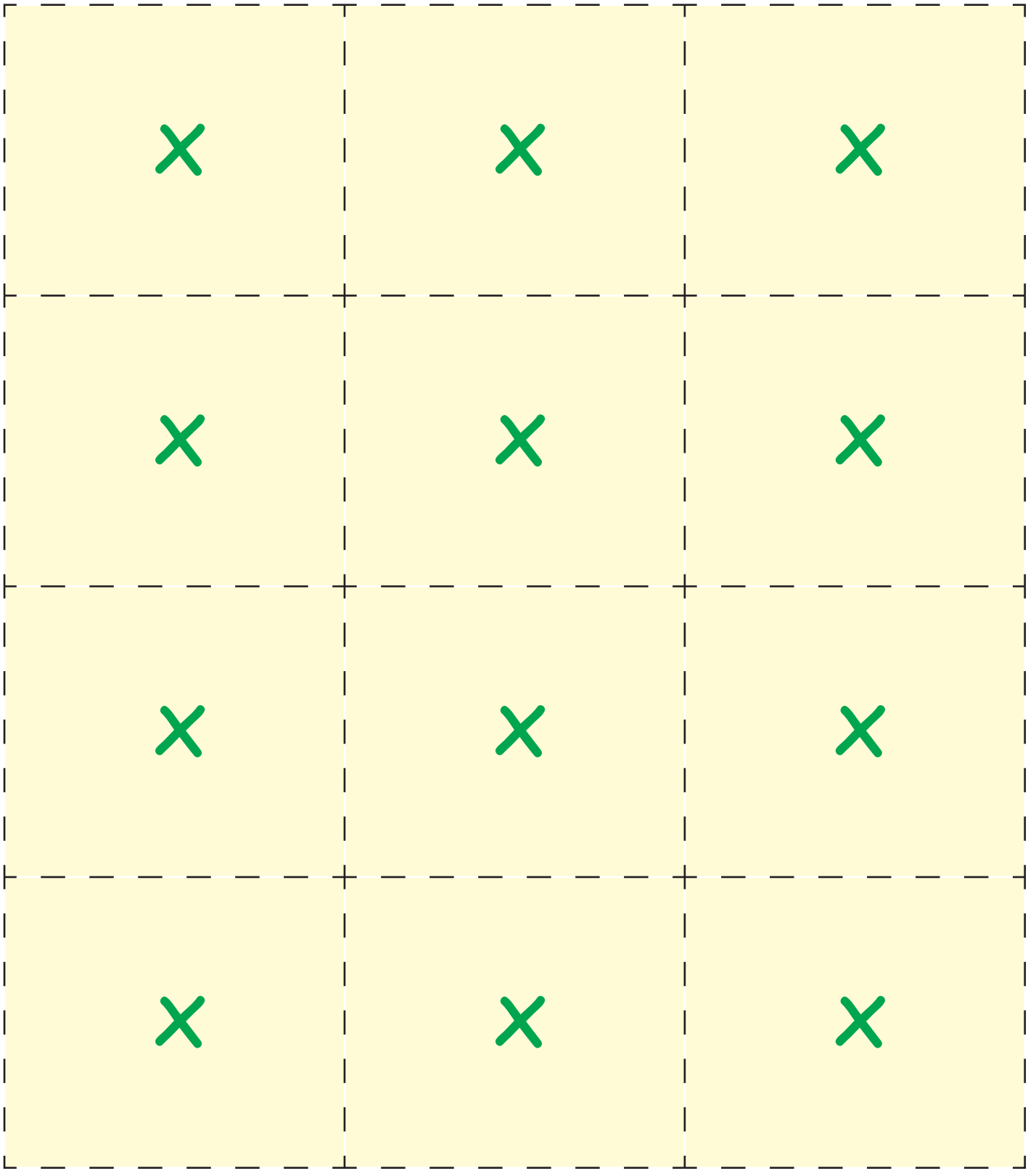
8×4

factors of 15: 1,3,5,15

factors of 18: 1,3,6,9,18

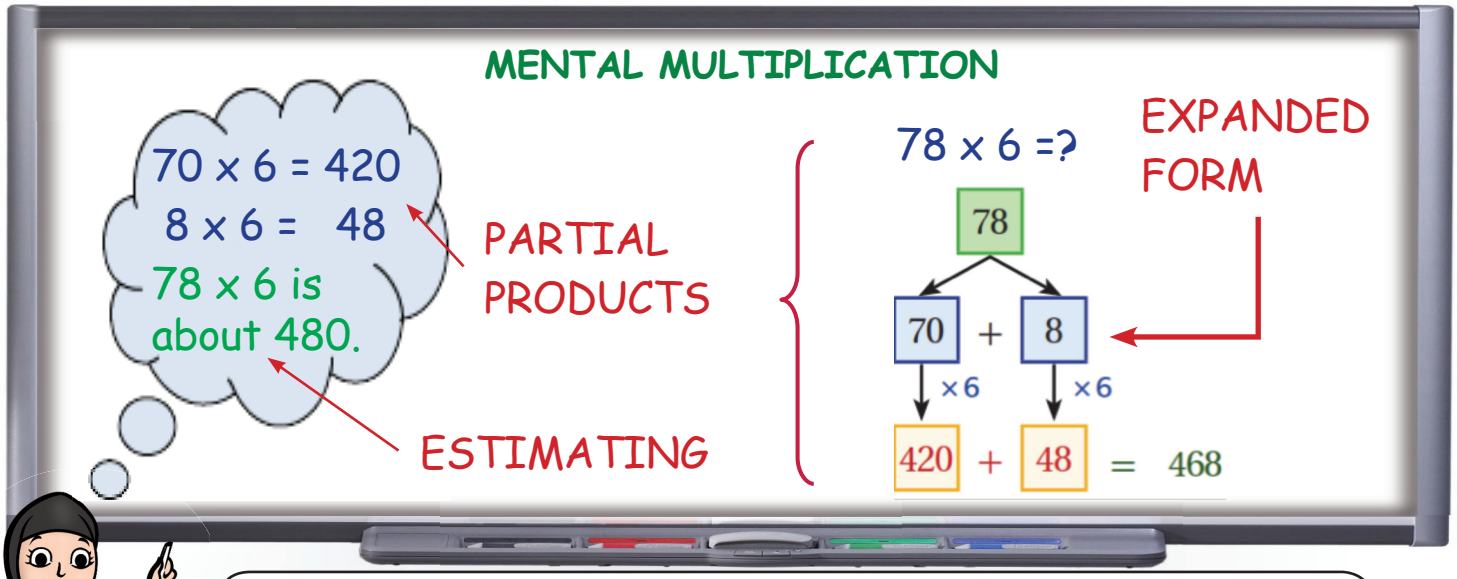
$3 \times 8 = 24$

$9\overline{)63}$ = 7



MENTAL MULTIPLICATION

KEYWORDS: mental multiplication partial products expanded form multiplication facts multiplying estimating



Hello, class! Today we will be talking about some of the ways we do **mental multiplication**. That is **multiplying** one number times another in our head. Who can share some ways of doing **mental multiplication**?

When I am **estimating** an answer or finding a close product, I use mental multiplication.

I use the **expanded form** of the factors to get a product. So, I think of seventy-eight as seventy plus eight. Look at the whiteboard to see what I mean.

Then it would be easier for you to multiply the expanded form using **partial products**.

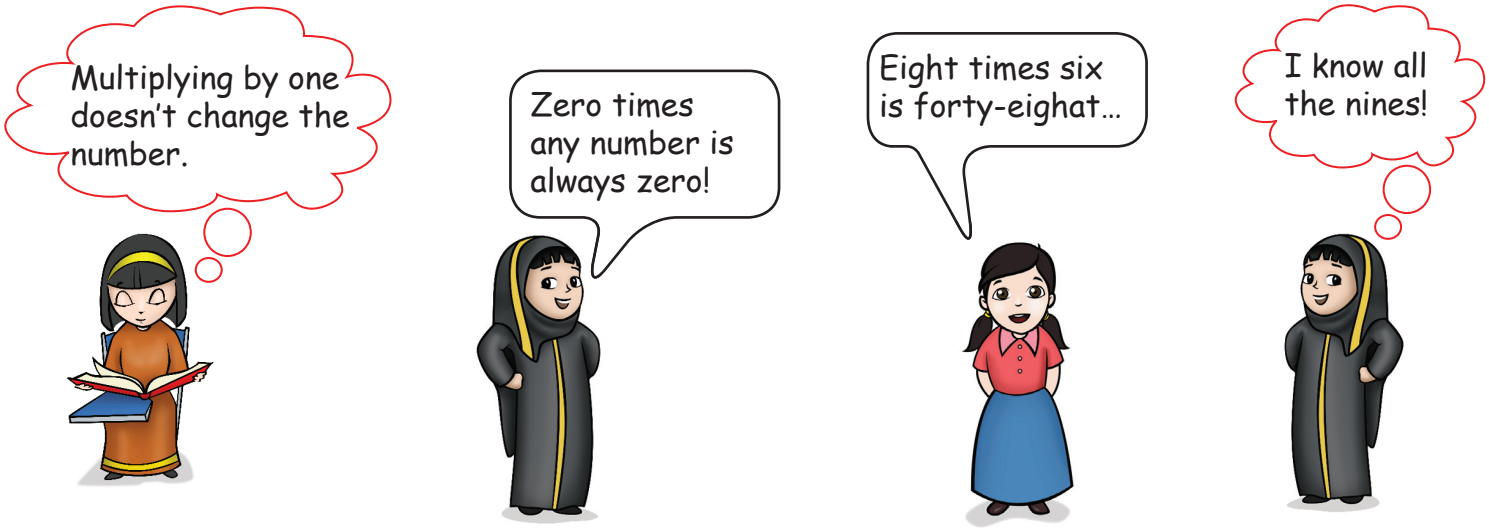
Yes! I know that way. We find the products of each place value separately, and then add the products together.

Of course, class, you must know your **multiplication facts**. Learning all the multiples of numbers 0 through 10 is very important. You can use the table below to help you memorize the multiplication facts.

X	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Task 1: LET'S TALK

Tell a partner the multiplication facts that you know.



Task 2: Match each word to the definition or example.

1. mental multiplication
2. expanded form
3. partial products
4. multiplication facts
5. multiplying
6. estimating

a) 78 = 70 + 8

b) 78 X 6
70 x 6 = 420
8 x 6 = 48

c) Finding products in your head.

d) Finding an answer that is close but not exact.

e) All of the multiples of 1 through 10.

f) Finding a product.

Task 3: MULTIPLE CHOICE!

Complete the sentences. Choose a, b or c.

1. Finding an answer that is close but not exact is _____.

   a) partial products **b)** estimating **c)** multiplying

2. When you find products of each place value separately, and then add the products together, you are using _____ .

   a) partial products **b)** estimating **c)** multiplying

3. When you find products of numbers you are _____.

   a) partial products **b)** estimating **c)** multiplying

4. The multiples of all the numbers from 1 to 10 are the _____ .

   a) mental multiplication **b)** expanded form **c)** multiplication facts

5. Finding products in your head is _____.

   a) mental multiplication **b)** expanded form **c)** multiplication facts

6. The _____ of 536 is 500 + 30 + 6.

   a) mental multiplication **b)** expanded form **c)** multiplication facts

MY Foldable

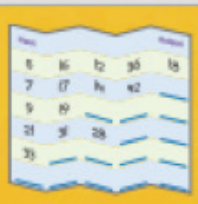
FOLDABLES Follow the steps on the back to make your Foldable.

Input	Add 10	Subtract 3	Multiply by 3	Divide by 2	Output
5	15	12	36	18	
7	17	14	42		
9	19				
21	31	28			
33					

FOLDABLES
Study Organizer

1

2



Output

Input

DIVISION

KEYWORDS: dividend divisor quotient remainder compatible numbers

compatible numbers

45 ÷ 6

45 ÷ 5 = 9

45 ÷ 6

48 ÷ 5 = 8

quotient → 31 r1

divisor → 4 | 125 ← dividend

-12

05

- 4

1 ← remainder

Good morning, class! Today's lesson is about division. The answer in division is called the **quotient**. Khalid, can you please tell us what the **divisor** is?

Yes, Mrs. Amna. The **divisor** is the number that will divide into a number. What is the **dividend**, Faisal?

The **dividend** is the number that is being divided. Can someone tell me what the **remainder** is?

The **remainder** is the number that is left after one whole number is divided by another. Do you know what **compatible numbers** are, Khalid?

Yes, Nasser. **Compatible numbers** are numbers that are easy to work with mentally. 720 and 90 are compatible numbers because 72 ÷ 9 = 8.

Task 1: MATCH!

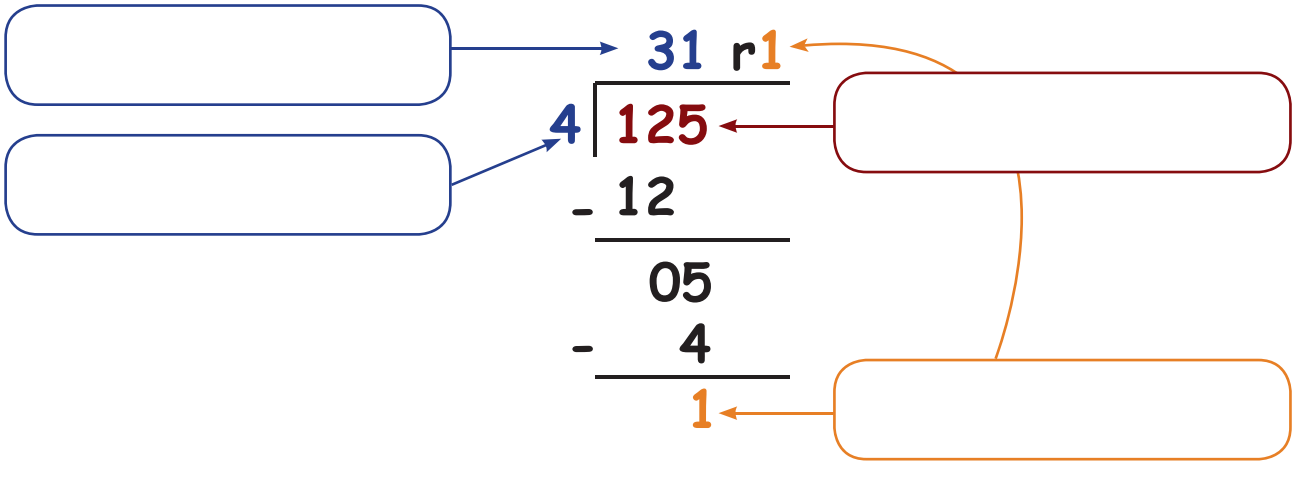
Match each word to the definition.

1	divisor	a)	The number left over after you divide.
2	dividend	b)	Numbers that are easy to work with mentally.
3	quotient	c)	The number that will divide into another number.
4	remainder	d)	The number you divide up.
5	compatible numbers	e)	The answer in division.

Task 2: LABEL!

Use the words in the box below to label the division problem. One word is used twice.

divisor dividend quotient remainder



Task 3: MULTIPLE CHOICE!

Use the words in the box to complete the sentences.

dividend	divisor	quotient	remainder	compatible numbers

1. A _____ is the number left over after dividing.
2. _____ are easy to work with mentally.
3. The answer in division is called the _____.
4. The _____ is the number you will divide up.
5. The number that you will divide into another number is the _____.

Task 4: Read this song about division with rhythm.

Division, division, division, division

Divide, multiply, subtract, bring down
Divide, multiply, subtract, bring down
Divide, multiply, subtract, bring down
If there's a remainder, it's upward bound!

Divisor goes into the dividend
Divisor goes into the dividend
Divisor goes into the dividend
And the quotient, answer, on top we'll send!

Task 5:

Sort the words in the box into multiplication words, or division words.

partial products dividend product divisor
common factor quotient multiple remainder

MULTIPLICATION

DIVISION

GAME TIME!

Can you remember Units 3, 4 and 5 words?

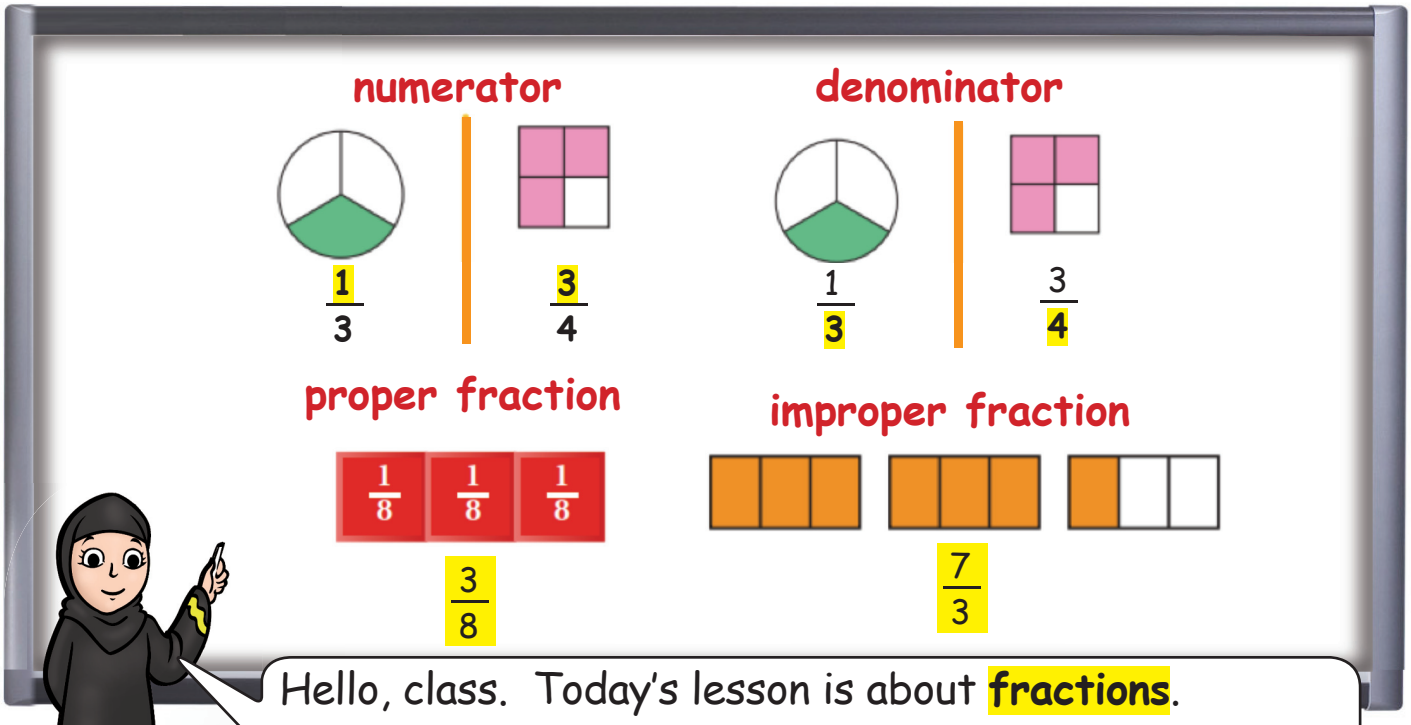
Look at the keywords on the bottom of the page. Write one word in each box. Listen as your teacher reads out a definition. Put an X on the box if you have the matching word. Three in a row is BINGO!

	BINGO	

factor	product	multiplication	multiple	common factor
prime number	composite number	common factor	pattern	rule
input	output	number machine	partial products	compatible numbers
division	dividend	divisor	quotient	remainder

FRACTIONS 1

KEYWORDS: fraction numerator denominator proper fraction improper fraction



Hello, class. Today's lesson is about **fractions**. A fraction is a number that represents part of a whole or part of a set.

The **numerator** is the number above the line in a fraction. The numerator tells us how many of the equal parts are being used.

Yes! The **denominator** tells us how many equal parts are in the whole. The **denominator** is always the bottom number in a fraction.

In a **proper fraction** the numerator is always less than the denominator. It is less than one whole.

Thats right! But in **improper fractions** the numerator is greater than or equal to the denominator. It's one whole or more.

Task 1: **Unscramble each word to complete the sentences.**

Use the words from the box below:

fraction **numerator** **denominator** **proper** **improper**

1. perrop
   The numerator is less than the denominator in ..... fractions.

2. roarmenut
   The ..... is the top number in a fraction.

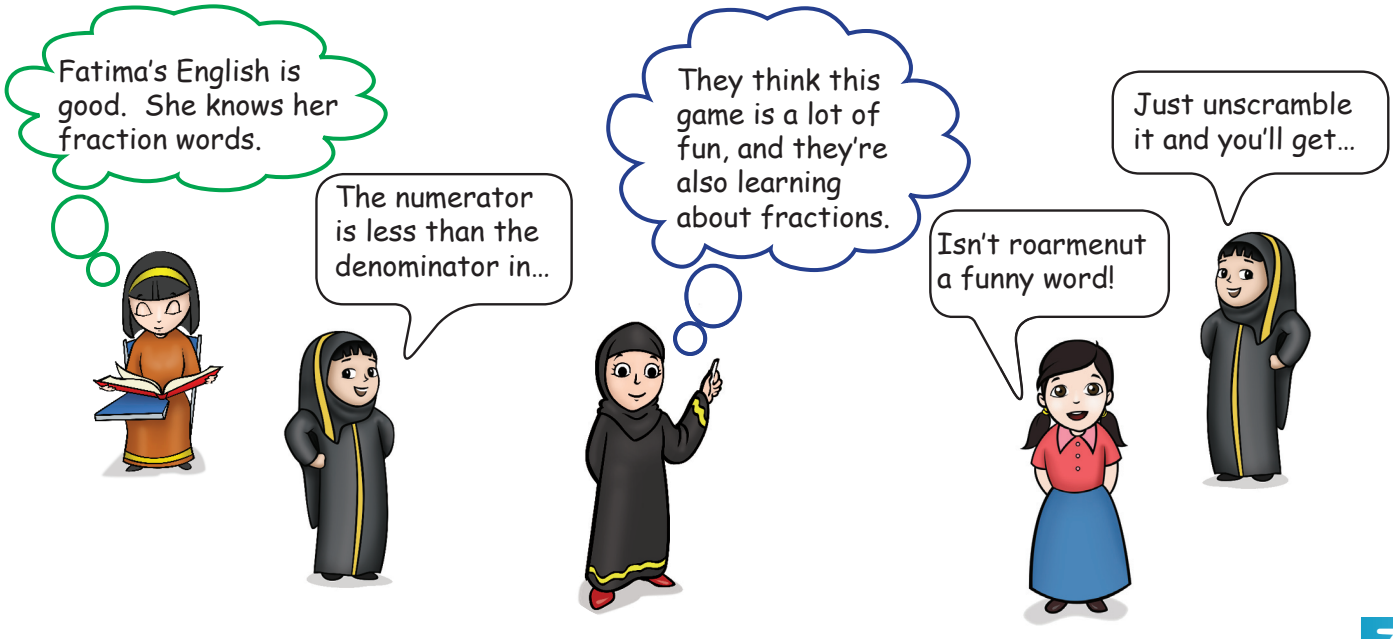
3. morpepir
   The numerator is greater than or equal to the denominator in ..... fractions.

4. contiraf
   A ..... represents part of a whole or part of a set.

5. emonnadirot
   The ..... is the bottom number in a fraction.

Task 2: **LET'S TALK!**

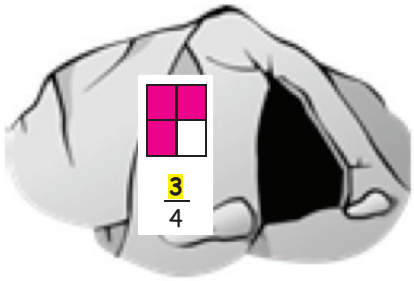
Read each sentence in Task 2 to a partner.



Task 3:

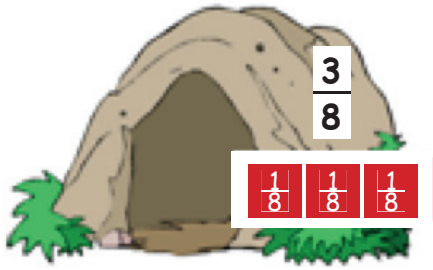
Help each bear cub find his cave.

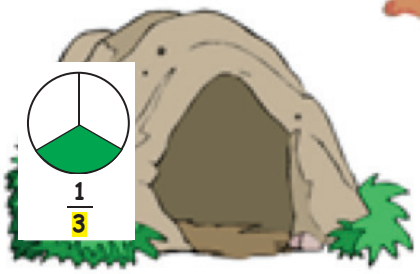
Draw lines to match the keywords to the pictures.



improper fraction

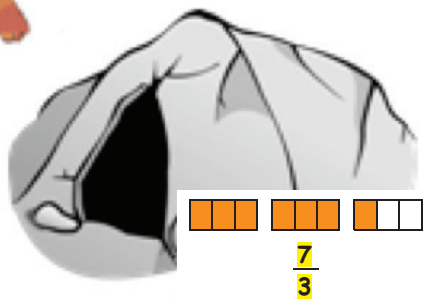
proper fraction





numerator

denominator



HOMEWORK!

1. Follow the directions to make the Foldables on the next pages.

2. Use the Foldables to tell someone at home about fractions.

MY Foldable

FOLDABLES Follow the steps on the back to make your Foldable.

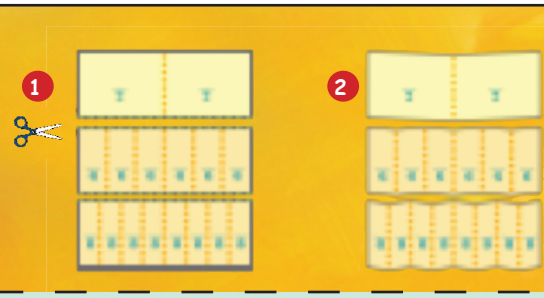
$\frac{}{2}$	$\frac{}{2}$

$\frac{}{6}$	$\frac{}{6}$	$\frac{}{6}$	$\frac{}{6}$	$\frac{}{6}$	$\frac{}{6}$

$\frac{}{8}$	$\frac{}{8}$	$\frac{}{8}$	$\frac{}{8}$	$\frac{}{8}$	$\frac{}{8}$	$\frac{}{8}$	$\frac{}{8}$

FOLDABLES

Study Organizer



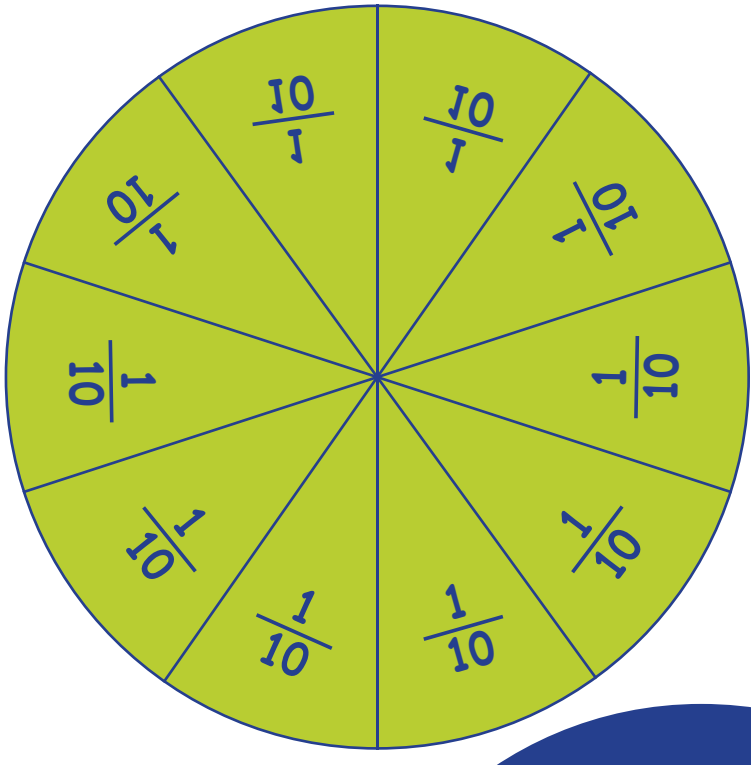
1

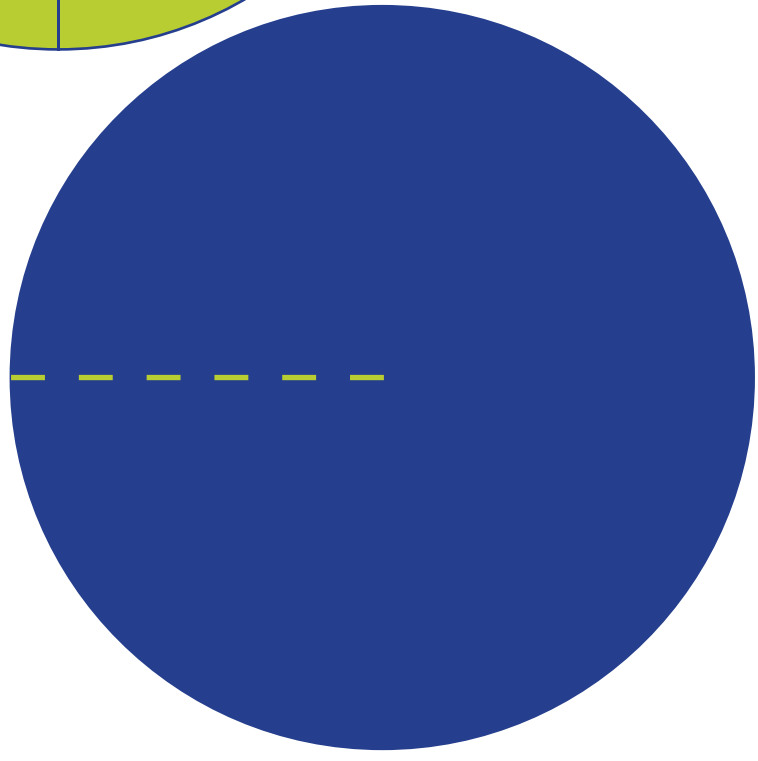
$\frac{}{3}$	$\frac{}{3}$	$\frac{}{3}$

$\frac{}{4}$	$\frac{}{4}$	$\frac{}{4}$	$\frac{}{4}$

MY Foldable

FOLDABLES Follow the steps on the back to make your Foldable.



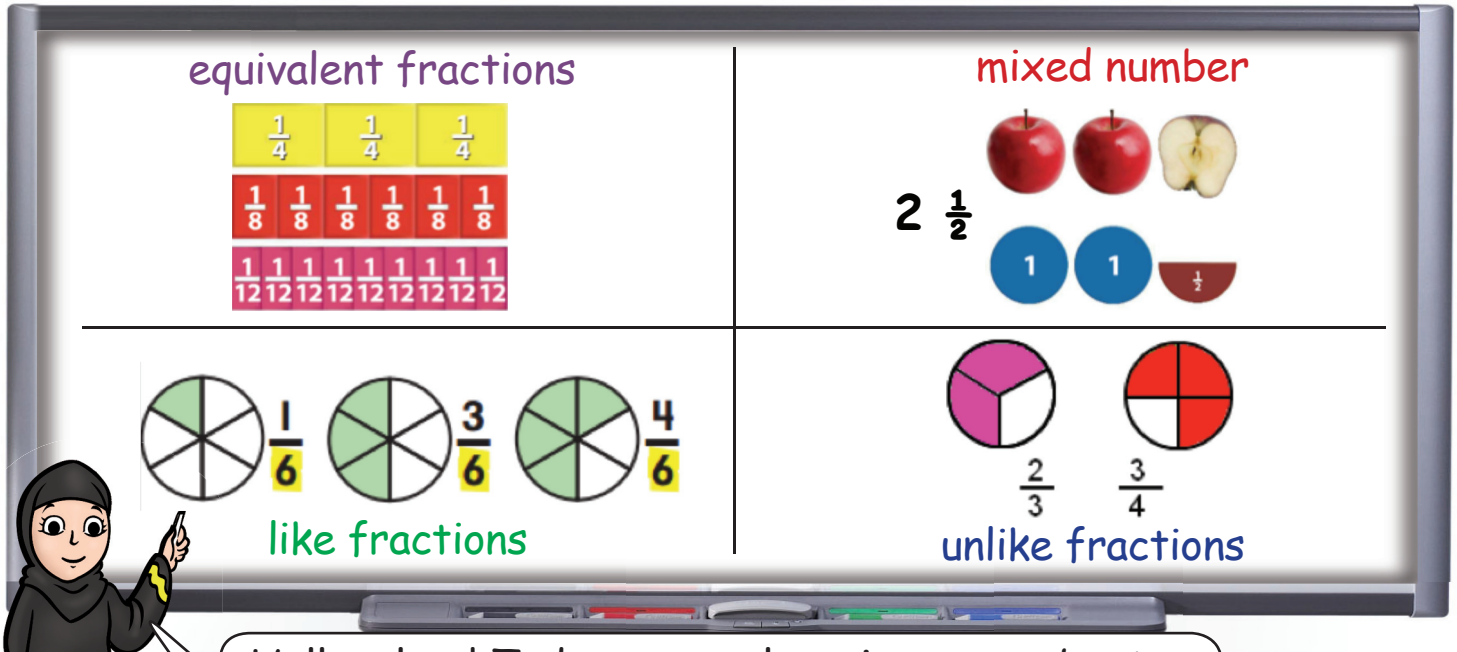


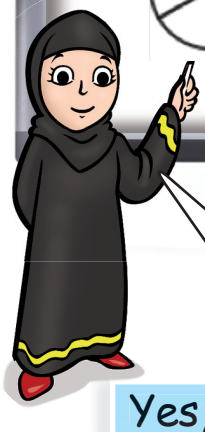
FOLDABLES

Study Organizer

FRACTIONS 2

KEYWORDS: equivalent fractions like fractions unlike fractions mixed number





Hello, class! Today we are learning more about fractions. Khalid, can you please tell us about **equivalent fractions**.

Yes, Mrs. Amna. **Equivalent fractions** represent the same number. On the board you can see that three-fourths is equal to six-eights and to nine-twelfths.

That's right. I know about **mixed numbers**. A mixed number has a whole part and a fraction part, like the apples on the board.

I like **like fractions** because they are easy. They have the same denominators.

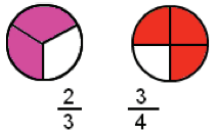
Unlike fractions have different denominators. I think they're more interesting.

Task 1:

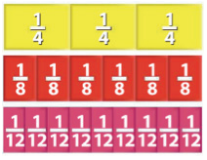
Draw lines to match the keywords to the pictures or examples.

1. equivalent fractions
2. mixed number
3. unlike fractions
4. like fractions

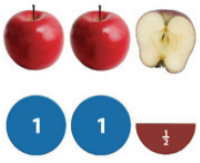
a)



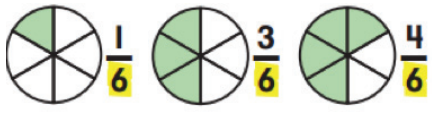
b)



c)

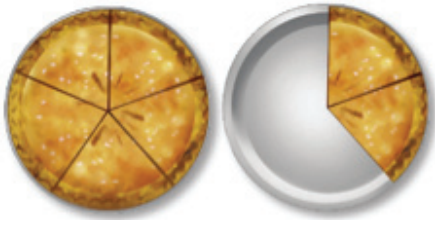


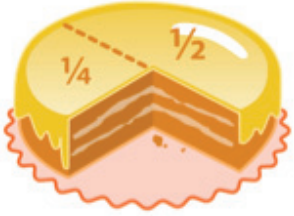
d)

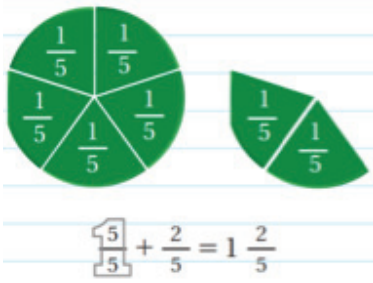


Task 2:

A mixed number has a whole number and a fraction. Circle the pictures that show mixed numbers.







Task 3: Draw your own mixed number picture.

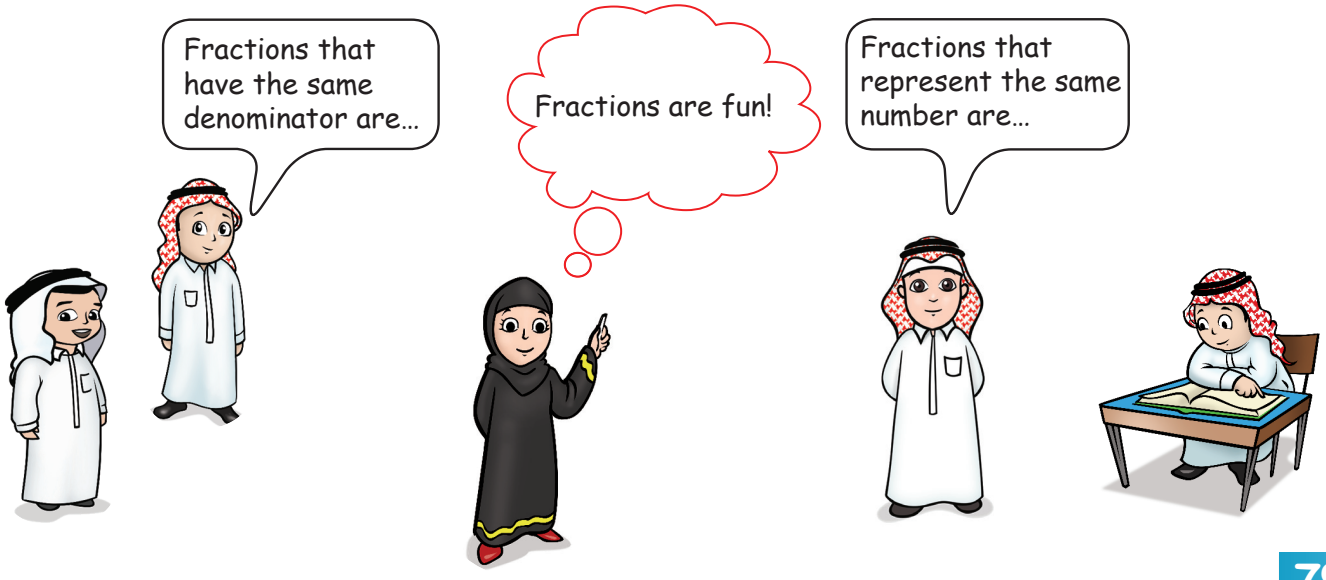
Task 4: Use the keywords in the box below to complete each sentence.

equivalent fractions	like fractions
unlike fractions	mixed number

1. A ..... has a whole number and a fraction.
2. Fractions that have the same denominator are ..... .
3. Fractions that represent the same number are ..... .
4. ..... have different denominators.

Task 5: LET'S TALK!

Read each sentence in task 4 to a partner.



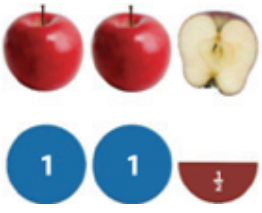
QUICK VOCABULARY CHECK UNIT 6

Each card shows an example of a key vocabulary word. Write each word from the box below on the card with the matching example.

fraction numerator denominator equivalent fractions
like fractions unlike fractions mixed number
improper fraction proper fraction

a) .....

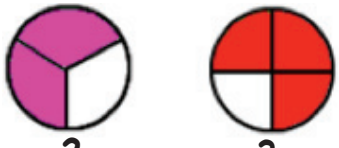
$2\frac{1}{2}$



b) p .....

$\frac{3}{8}$

c) .....



$\frac{2}{3}$ $\frac{3}{4}$

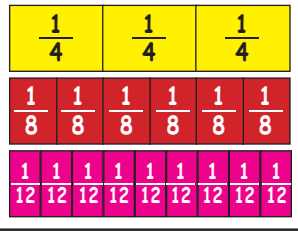
d) f .....

$\frac{3}{4}$

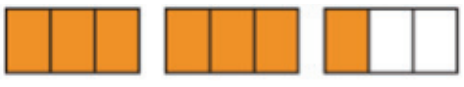
e) .....

$\frac{1}{3}$

f) .....



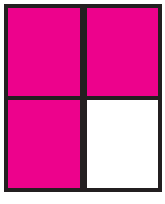
g) .....



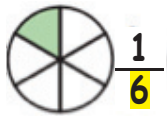
$\frac{7}{3}$

h) .....

$\frac{3}{4}$



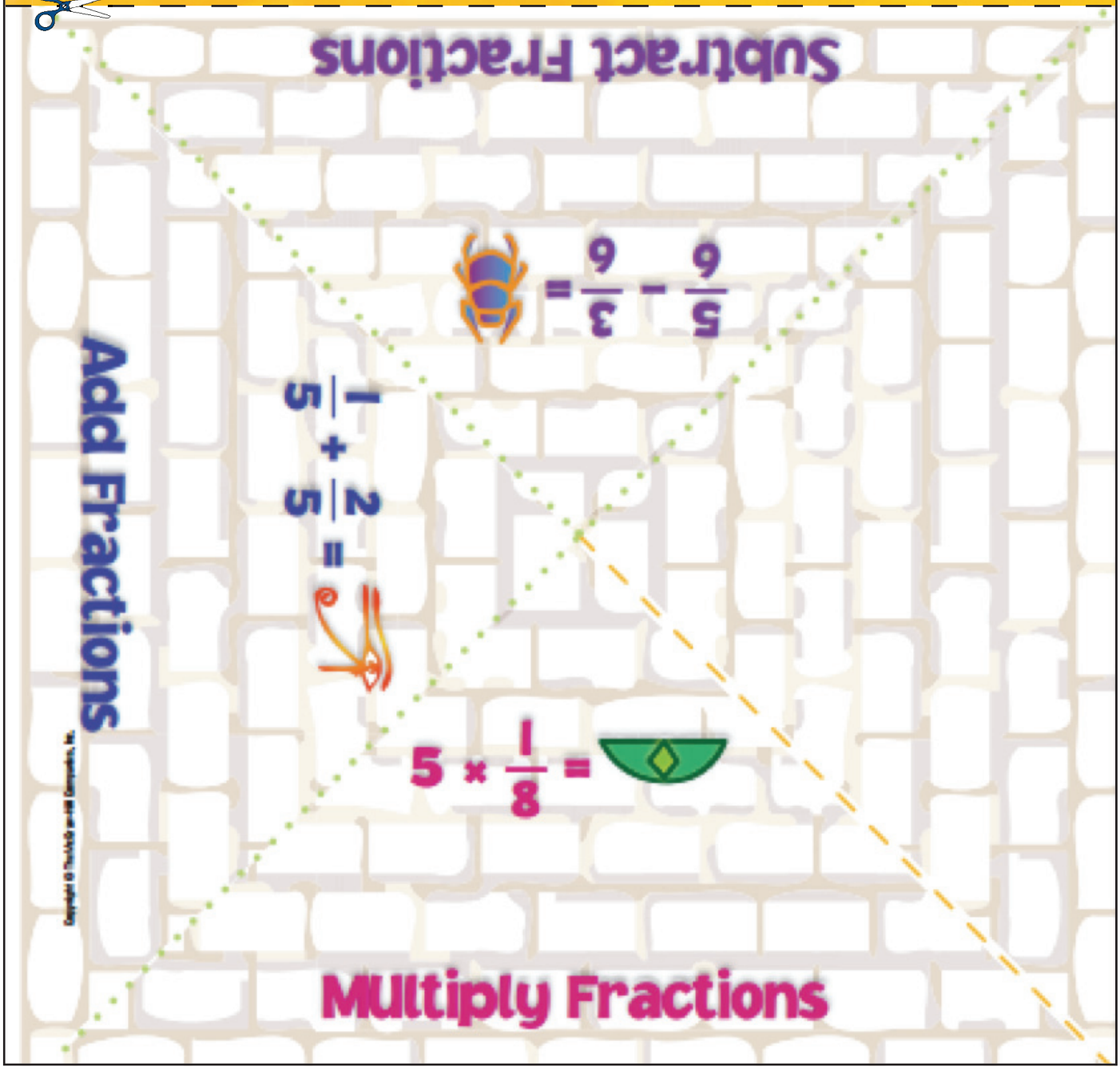
i) .....



$\frac{1}{6}$ $\frac{3}{6}$ $\frac{4}{6}$

MY Foldable

FOLDABLES Follow the steps on the back to make your Foldable.



FOLDABLES
Study Organizer

Subtract Fractions

Multiply Fractions

Add Fractions

SEMESTER 1 QUIZ

Task 1: Can you remember the keywords?

Write the correct keyword for each definition from the box below.

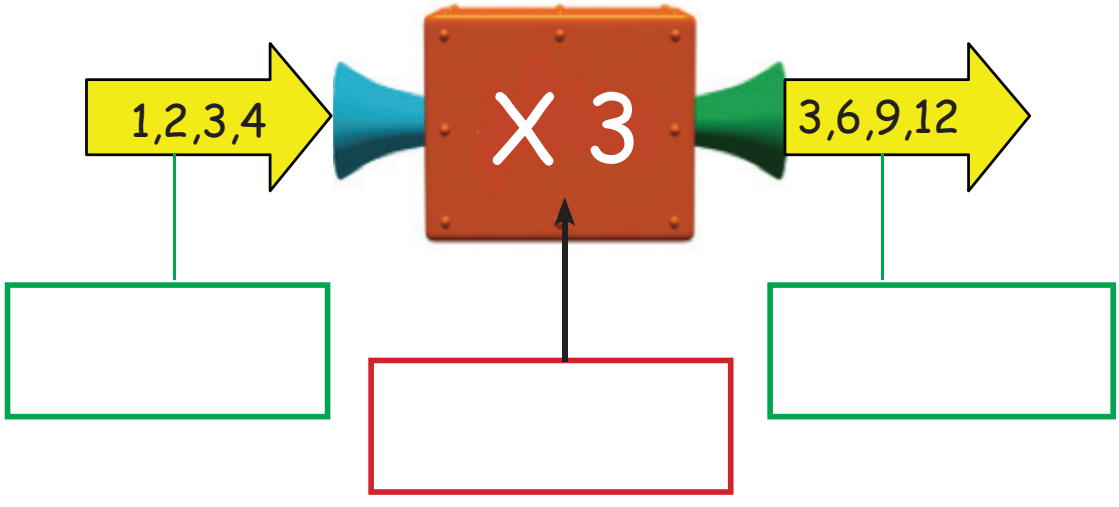
regroup inverse operation number sentence pattern

	KEYWORD	DEFINITION	PICTURE or EXAMPLE
1		A sequence of numbers that follows a rule.	3,6,9,12,15
2		This uses numbers and the =, < or > sign.	5000 – 2000 = 3000 5000 > 3000
3		Operations that undo each other, such as addition and subtraction.	45609 − 41596 = 4013 41596 + 4013 = 45609
4		To use place value to exchange equal amounts when renaming a number.	5 10 6 0 9 − 5 9 6 1 3

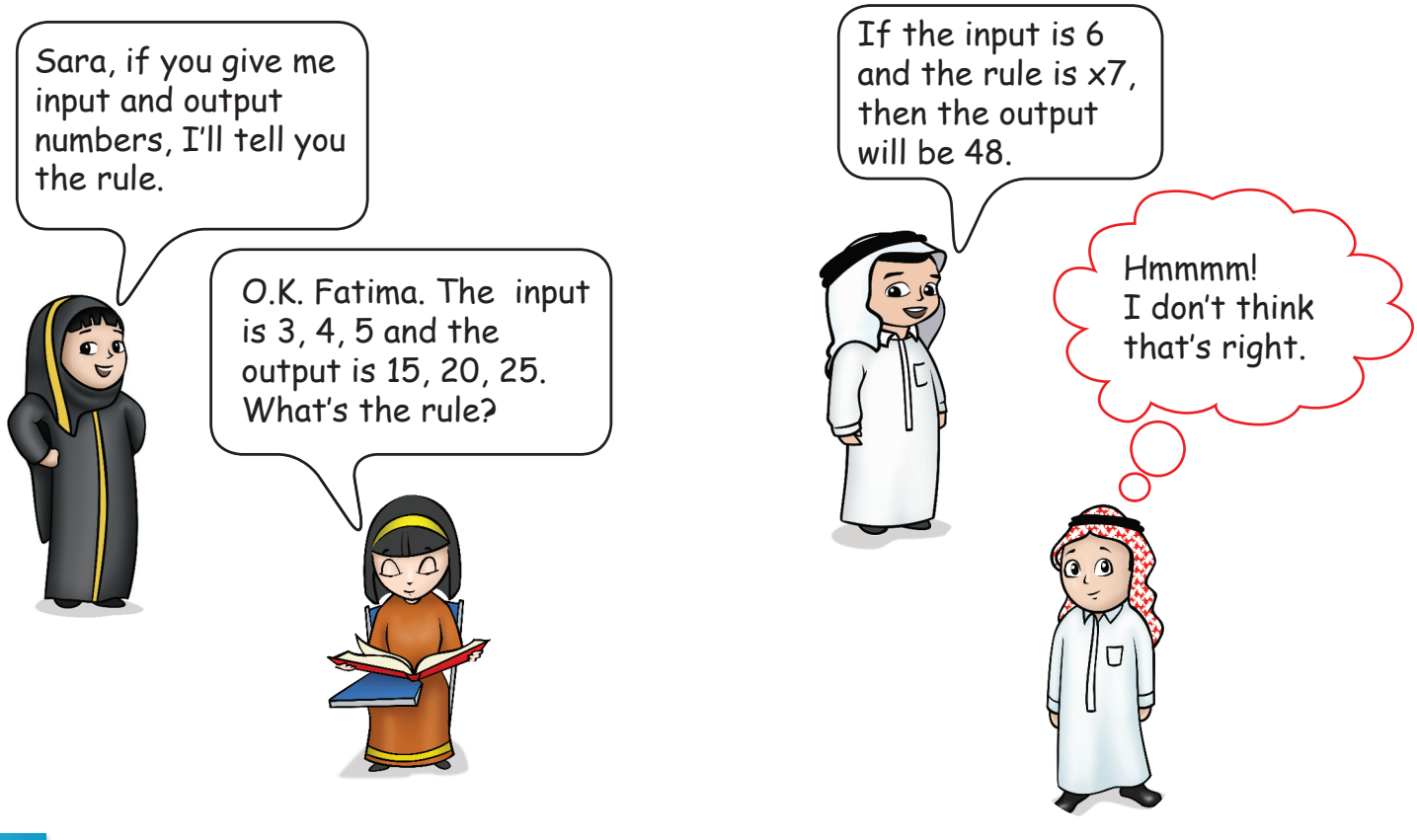
Task 2:

Use the keywords from the box below to label these pictures.

number machine	rule	input	output



This is a picture of a .....



Task 3: MATCHING.

1	multiple
2	common factor
3	prime number
4	composite number

Help us draw lines to match the words with the correct numbers or picture.

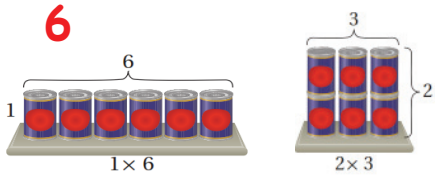
a)

18	1,	2,	3, 6, 9, 18
20	1,	2,	4, 5, 20

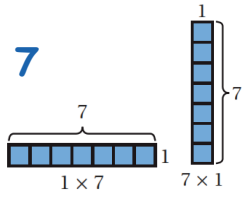
b) × 7

7	14	21	28	35	42	49	56	63	70

c) 6



d) 7



Task 4: MULTIPLE CHOICE!

Complete the sentences. Choose a, b or c.

1. The number that is left after dividing is the ..... .

   a) partial product b) remainder c) compatible number

2. The ..... of 327 is 300 + 20 + 7.

   a) remainder b) compatible numbers c) expanded form

3. Numbers that are easy to work with mentally are ..... .

   a) compatible numbers b) expanded form c) partial products

4. We use ..... when we multiply each place value separately and then add them together.

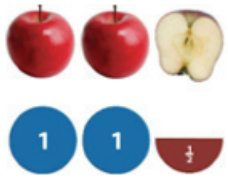
   a) expanded form b) partial products c) remainder

Help us draw lines to match each word with the correct symbol.

Task 5: MATCHING .

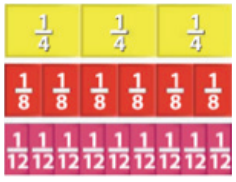
1. equivalent fractions
2. unlike fractions
3. mixed number
4. improper fraction

a) $2\frac{1}{2}$

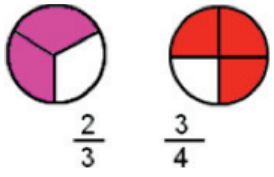


b) $\frac{7}{3}$

c)



d)



$\frac{2}{3}$ $\frac{3}{4}$

Task 6: LET'S DRAW!

Choose any keyword that you learned this year.

What is your favorite? Draw a poster to show the meaning of the word.

Keyword

.....

product

The answer in a multiplication problem.

20 x 3 = 60

fraction

factor

order

43, 68, 92, 147

To put numbers in place according to a rule.

denominator $\frac{3}{4}$

The bottom number in a fraction. It tells us how many equal parts in the whole.

nearest hundred

estimation

remainder

46 ÷ 3 = 15 r1

The number that is left after one whole number is divided by another.

GLOSSARY

GLOSSARY

A

addition
(pg. 31)
To put two or more numbers together to make a new number.

C

common factor
(pg. 45)

factors of	even factors	odd factors
18	18 6 2	9 3 1
20	20 10 4 2	5 1

Factors of two or more numbers that are the same.

compare
526 > 487
(pg.23)
To decide which number is greater than, less than or equal to another.

compatible numbers
(pg. 65)
Numbers that are easy to work with mentally.

composite number
(pg. 45)
Any number with more than two factors. 4, 6, 8, 9... are composite numbers.

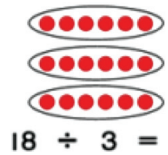
D

denominator
$\frac{3}{4}$
(pg. 70)
The bottom number in a fraction. It tells us how many equal parts in the whole.

difference
99 - 43 = 56
(pg. 31)
The answer in an subtraction problem.

digit
(pg. 11)
The symbols 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 that are used to write a whole number.

dividend
24 ÷ 8 = 3
(pg. 65)
The number that is divided up.

division


(pg. 39)
An operation on two numbers in which the first number is split into the same number of equal groups as the second number.

GLOSSARY

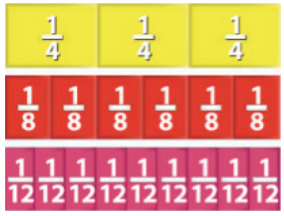
division sentence 24 ÷ 6 = 4
(pg. 39)
A number sentence using numbers and the symbols = and ÷.

divisor 24 ÷ **6** = 4
(pg. 65)
The number that will divide into another number.

E

equal to (=) 7 + 2 = 9
(pg.23)
When one number or quantity is the same as another.

equivalent fractions
(pg. 77)



Fractions that represent the same number. They are equal.

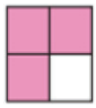
estimation
(pg. 35, 59)
Finding a number that is close to the exact value. About how much.
(Related words: estimate, estimating)

expanded form 400 + 20 + 9 (4 hundreds, 2 tens, 9 ones)
(pg. 11, 59)
A way to write numbers that shows how much each digit is worth.

F

factor
70 ← factor
x 8 ← factor
560
(pg. 39)
A number that divides a whole number evenly. Also a number that is multiplied by another number.

fraction



(pg. 70)
A number that represents part of a whole or part of a set.

G

greater than (>)
(pg. 23)
When one number or quantity is more than another.

GLOSSARY

H

hundreds

(pg. 17)

The groups of one-hundred in a number. The place to the left of the tens.

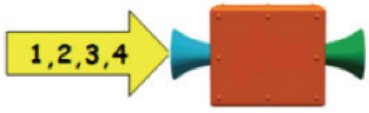
I

improper fraction

(pg. 70)

The numerator is greater than or equal to the denominator.

input



(pg. 51)

Numbers before they are changed by a rule.

inverse operations

(pg. 35)

Opposite operations, like subtraction and addition, that undo each other.

L

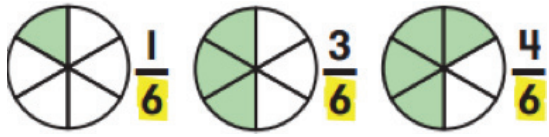
less than (<)

(pg. 23)

When one number or quantity is smaller than another.

like fractions

(pg. 77)



Fractions that have the same denominator.

M

mental multiplication

(pg. 59)

Multiplying one number by another to find a product in your head.

mentally

(pg. 31)

In your head.

millions
(pg. 17)

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
8	6	4	2	3	9	7
8,000,000	600,000	40,000	2,000	300	90	7

The amount of groups of one-million in a number. The seventh place to the left of the decimal.

mixed number $2\frac{1}{2}$

(pg. 77)

A mixed number has a whole part and a fraction part.

multiple
(pg. 45)

7	14	21	28	35	42	49	56	63	70

The product of that number and any whole number. Multiples of 7 are shown in the example.

multiplication

(pg. 39)

Repeated addition.
3 x 6 = 18; 6 + 6 + 6 = 18

multiplication facts
(pg. 59)

The times tables from
0 x 0 = 0 to 10 x 10 = 100.

multiplication sentence
(pg. 39) **4 x 6 = 24**

A number sentence using numbers and the symbols = and x.

multiplying
(pg. 59)

To do a multiplication.

N

nearest hundred
(pg. 27)

The hundreds place closest to the number.

nearest ten
(pg. 27)

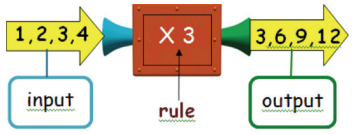
The tens place closest to the number.

number line


(pg. 23)

A line with numbers that get larger from left to right.

number machine
(pg. 51)



A device that uses a rule to change each number going in to a new number.

GLOSSARY

number sentence 3000 + 2000 = 5000
(pg. 35)

A statement in math using numbers and symbols, such as = or >.

numerator $\frac{3}{4}$
(pg. 70)

The number above the line in a fraction. The number of equal parts being used.

O

ones
(pg. 17)

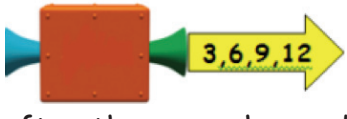
hundreds	tens	ones
3	9	7
300	90	7

The amount of ones in a number. The first whole number place.

order 43, 68, 92, 147
(pg. 23)

To put numbers in place according to a rule.

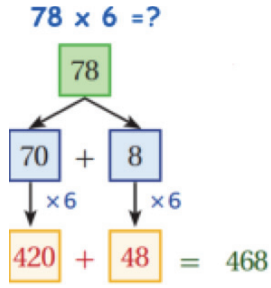
output
(pg. 51)



Numbers after they are changed by the rule.

P

partial products
(pg. 59)



Finding the products of each place value separately, and then adding the products together.

pattern
(pg. 51)

A list of numbers that follow a rule. 3,6,9,12... is a pattern.

pattern table
(pg. 51)

input	output
1	3
2	6
3	9

A table that organizes the input and output of a number machine.

period
(pg.11)

THOUSANDS Period				ONES Period		
Hundred thousand	Ten thousands	Thousands	,	hundreds	tens	ones (units)
	1	2	,	5	7	8
	Twelve thousand			five hundred	seventy-eight	

The name given to each group of three digits on a place-value chart.

place value

(pg. 11)

The place of each digit in a number tells you how much that digit is worth.

In the number 3842 the **8** = 800. It is in the hundreds place.

place value chart

(pg. 17)

millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
8	6	4	2	3	9	7
8,000,000	600,000	40,000	2,000	300	90	7

A chart that shows the position and value of each digit in a number.

prime number

(pg. 45)

A whole number greater than zero that has exactly two factors, one and itselt.

2, 3, 7, 11, 13... are prime numbers.

product 20 x 3 = 60

(pg. 39)

The answer in a multiplication problem.

proper fraction $\frac{1}{2}$

(pg. 70)

The numerator is always less than the denominator.

Q

quotient

(pg. 39, 65)

$$4\overline{)24} \quad 6 \leftarrow \text{quotient}$$

The answer in a division problem.

24 ÷ 4 = 6

R

regroup

(pg. 35)

$$\begin{array}{r} {\scriptstyle 5\ 10} \\ 6\not{0}9 \\ -596 \\ \hline 13 \end{array}$$

To use place value to exchange equal amounts to rename a number.

remainder

(pg. 65) **46 ÷ 3 = 15 r1**

The number that is left after one whole number is divided by another.

round/rounding 329 → 300

(pg. 27)

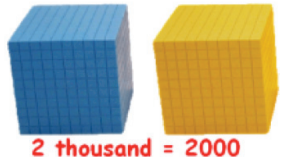
To change a number to another number that is easier to work with.

GLOSSARY

rule


(pg. 51)

The operation that changes an input to an ouput.

thousands


(pg. 17)

The groups of one-thousand in a number. The place to the left of the hundreds place.

S

standard form 3,127,986
(pg. 11)

The way we usually **write** numbers.

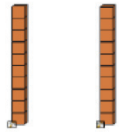
subtraction
(pg. 31)

To take one number away from another.

sum 56 + 43 = 99
(pg. 31)

The answer in an addition problem.

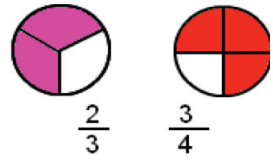
T

tens


(pg. 17)

The groups of ten in a number.
The place to the left of the ones place.

U

unlike fraction


(pg. 77)

Fractions that have different denominators.

W

word form *three hundred forty-seven*
(pg. 11)

The way we say numbers or write them in words.

SCIENTIFIC ENGLISH

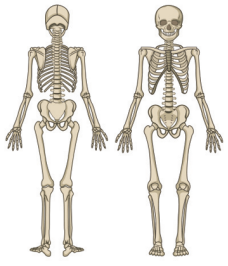
SCIENCE

GRADE 4

GRADE 3 VOCABULARY REVIEW

TODAY'S SCIENCE KEYWORDS

Look at some of the key words from grade 3! Write the meaning of the word and draw a picture or give an example. The first one is done for you!

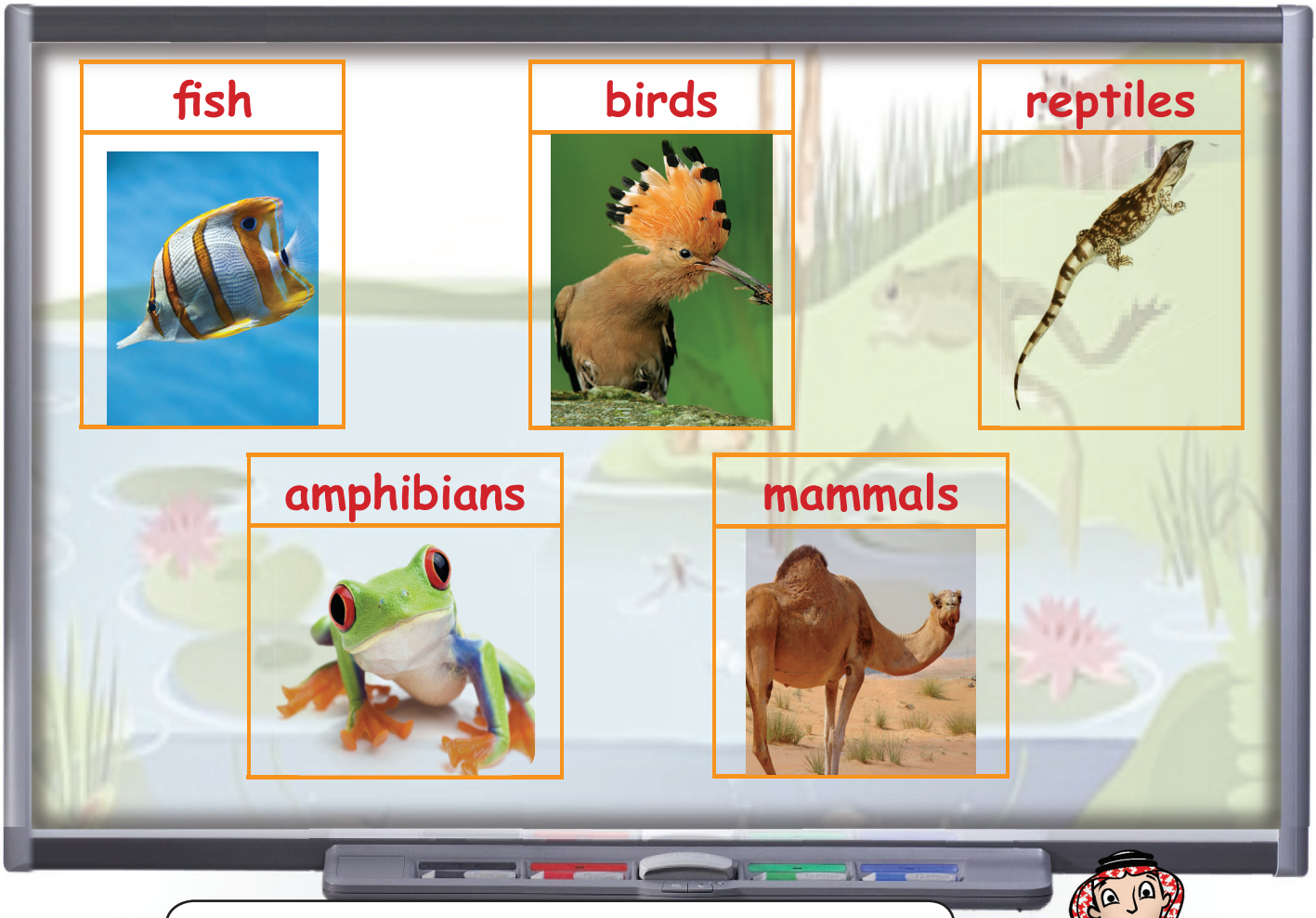
KEYWORD	MEANING	PICTURE or EXAMPLE
Skeleton	The structure inside our body made of bones!	
Lungs		
Blood cells		
Protein		

GRADE 3 VOCABULARY REVIEW

KEYWORD	MEANING	PICTURE or EXAMPLE
Plastic		
Waterproof		
Transparent		
Shadow		
Reflect		

IDENTIFYING ORGANISMS

KEYWORDS: fish reptiles mammals birds amphibians



Hello! Today we are classifying animals!
What does that mean, Faisal?
How can we **classify** animals?

If we **classify** something, we put it in a class or group. We can classify living things into fish, birds, reptiles, mammals and amphibians. Living things live in an ecosystem. An ecosystem is where different living things and the environment function together.

Task 1: NOW IT'S YOUR TURN!

Match the two parts.

1. A frog is
2. An elephant is
3. A place where different animals live together is called
4. I fly and lay eggs I am
5. A lizard is

a) a reptile.
b) an amphibian.
c) a mammal.
d) a bird.
e) an ecosystem.

Task 2: MULTIPLE CHOICE!

Choose the correct answer! Is it a, b or c?

1. A frog is a/an ..... .

a) amphibian b) fish c) reptile

2. Different animals and the environment live together in a/an ..... .

a) ecosystem b) house c) amphibians

3. Humans, like you and me are ..... .

a) amphibians b) fish c) mammals

4. A snake is a/an ..... .

a) amphibian b) fish c) reptile

Task 3: **LET'S TALK!** **Ask and answer the following questions!**

How can we classify living things?

What is an ecosystem?

What is a frog?
What is a snake?

There are...

It's a...

Let me ask you, what is a dog? How about a cat?

Task 4: **LISTEN AND DRAW!**

Draw an animal.

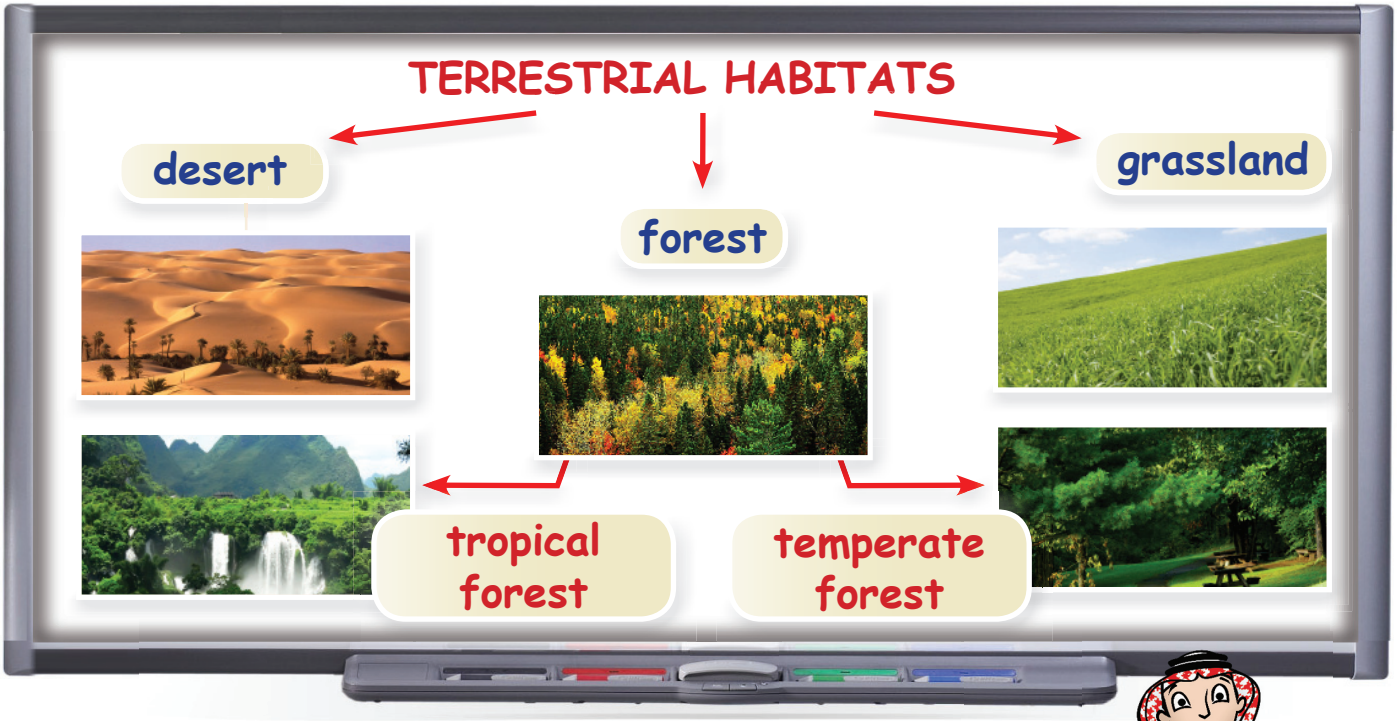
Describe it to your partner so that they can draw it.

Your animal.

Your partner's animal.

TERRESTRIAL HABITATS

KEYWORDS: desert forest grassland terrestrial tropical forest temperate forest



Today we are studying terrestrial habitats. These are habitats that are on land. Tell me more, Nasser.

A **forest** habitat is where you have lots of trees. Tropical rain forests are where the temperature is hot, like in Brazil. **Temperate forests** are where it is cold, like in Europe and North America. Look at the pictures!

Grasslands are open large areas of grass like you find in parts of Africa.

Task 1: NOW IT'S YOUR TURN!

Match the boxes to make correct sentences.

1	A desert	a)	is a large area of grass.
2	Grassland	b)	are habitats that are on the land.
3	Tropical rain forest	c)	is a forest where it is wet and the termperture is hot.
4	Terrestrial habitat	d)	is a hot and dry climate.

Task 2: MULTIPLE CHOICE!

Choose the correct answer. Is it a, b or c?

1. A/An ..... is a terrestrial habitat.

   a) river b) desert c) ocean

2. A/An ..... habitat is a large area of grass.

   a) nature b) grassland c) desert

3. A ..... usually has a lot of trees.

   a) pond b) desert c) forest

4. ..... can change habitats.

   a) Nature b) Humans c) Both a and b

Task 3: LET'S TALK!

Ask and answer the following questions.

What kind of habitat is grassland?

Describe what kind of habitat the desert is?

It's a... habitat.

A grassland is....

The desert is

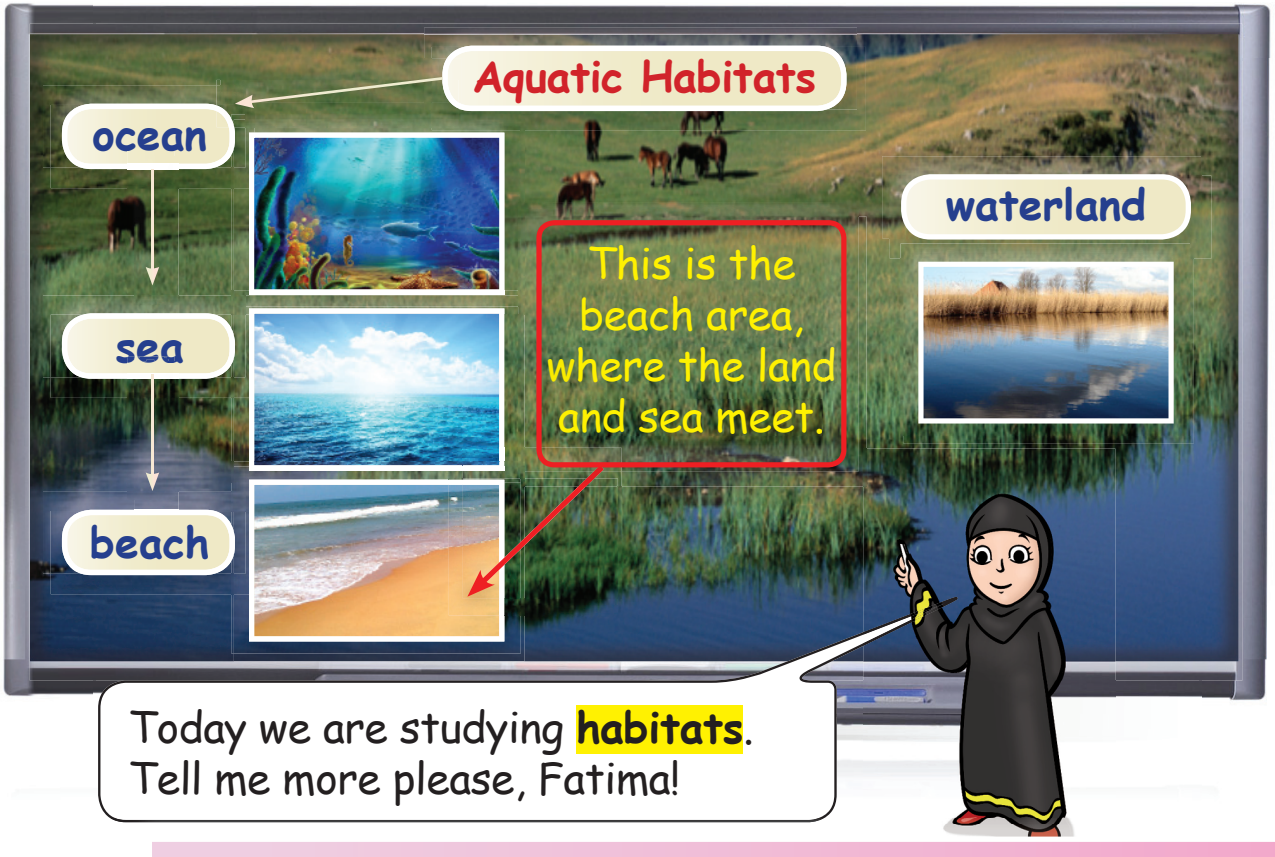
Task 4:

Copy the word and draw an animal you think lives in that habitat.

Word	Copy in this column	Picture of animal that lives in that habitat.
desert		
grassland		
tropical rain forest		
temperate forest		

AQUATIC HABITATS

KEYWORDS: habitat aquatic ocean waterland sea beach



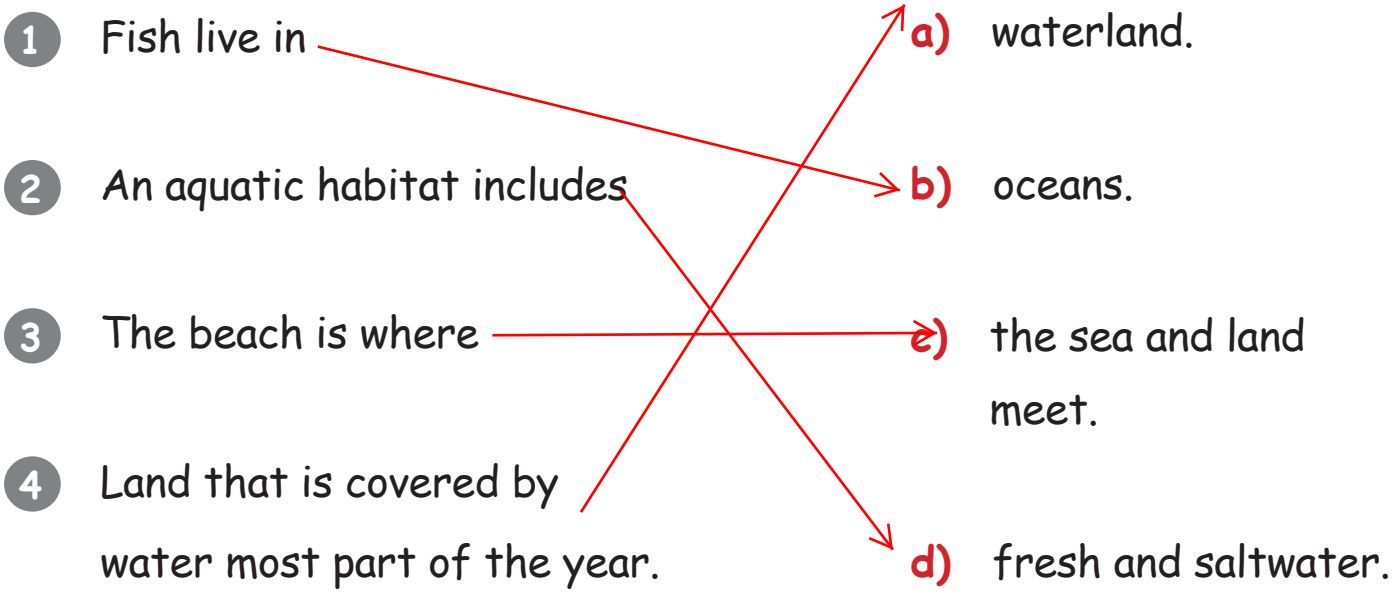
Today we are studying **habitats**. Tell me more please, Fatima!

There are two kinds of aquatic habitats. **Oceans** and the **seas**. They both have salt water. **Waterlands** are the areas where the land is covered by water most of the year. It can be salty or fresh water. A beach is the area where the land and ocean meet. Do you know the difference between **oceans** and the **seas**?

I do! Seas are smaller than oceans. Usually some part of the sea is surrounded by land.

Task 1: NOW IT'S YOUR TURN!

Draw lines. Match the two parts of the sentences.



Task 2: MULTIPLE CHOICE!

Choose the correct answer. Is it a, b or c?

1 You often go to the ..... to enjoy your time.

a) beach b) school c) habitat

2 Fish are ..... animals.

a) salt water b) freshwater c) a and b

3 The seas, oceans and waterlands are ..... habitats.

a) aquatic b) freshwater c) terrestrial

Task 3: LET'S TALK!

Ask and answer the following questions!

What is a habitat?

What does a beach mean?

What's the difference between oceans and seas?

A habitat is where...

A beach is.

The difference between...

Task 4: LISTEN AND DRAW.

Draw a habitat with plants and animals in the box. Don't show your partner. Describe it to your partner so that they can draw it. Compare pictures! Are they the same?

Your habitat	Your partner's habitat

PROTECTING HABITATS

KEYWORDS: protect environment flood drought deforestation pollution natural reserve

Today we are studying **protecting habitats**.
What do you think this picture tells us?
Fatima, please tell me more.

Our **environment** can be damaged. Sometimes by natural disasters like **floods** (too much water), or **droughts** (not enough water). Other times by us – humans. We carry out **deforestation** to make more room for farms, and the **pollution** we have caused, by cars for example, all harm the environment. We need to **protect** our environment.

Task 1: NOW IT'S YOUR TURN!

Match the boxes to make correct sentences.

1. pollution
2. flood
3. deforestation

a) when humans cut down lots of trees that are part of a forest.

b) when we get too much water and the land is covered by it.

c) when our environment is harmed by humans. For example, when a big factory produces smoke.

Task 2:

Match the word to the correct picture using arrows:

1. pollution
2. drought
3. flood
4. deforestation

Task 3:

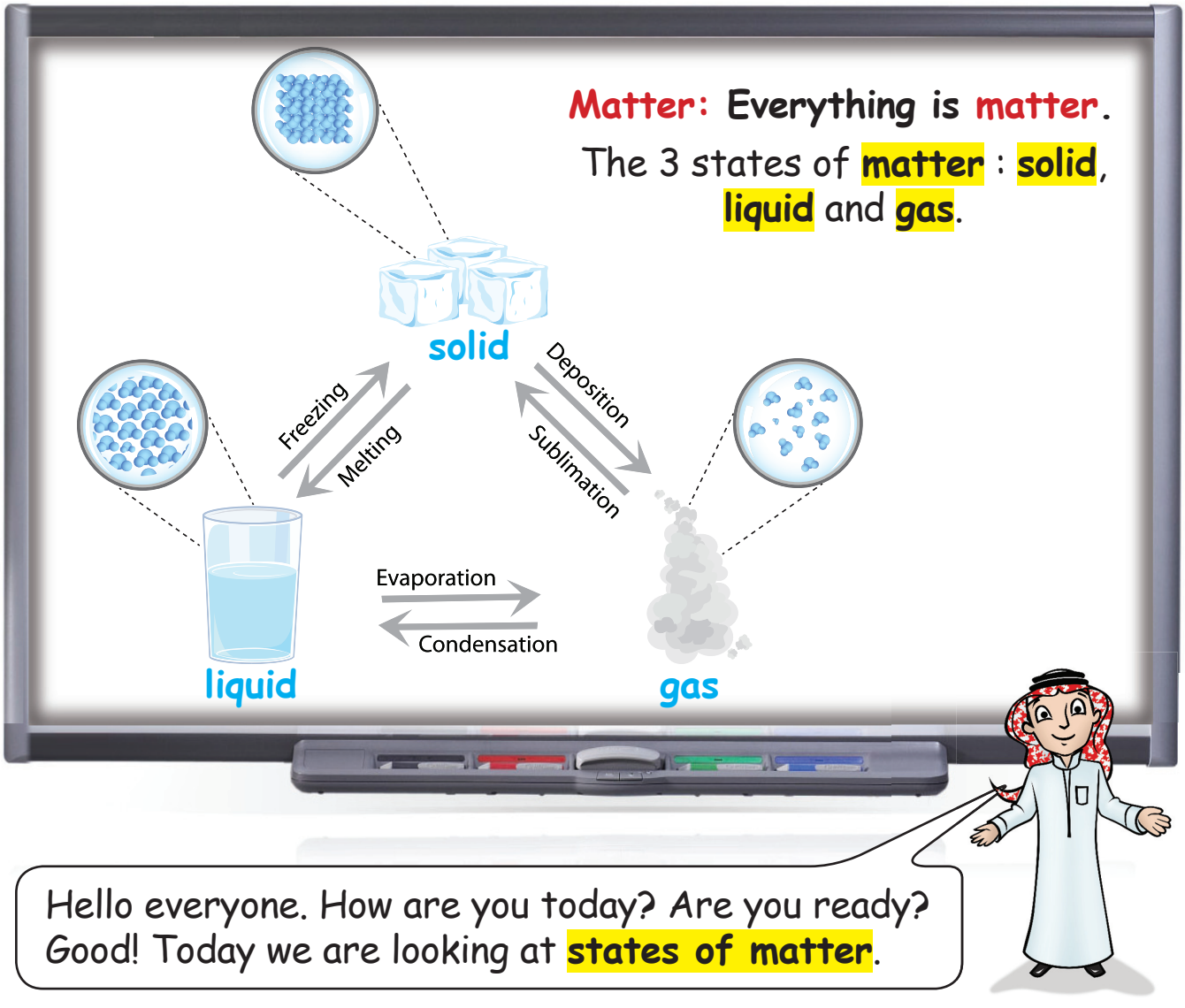
Find the following words in the word search.

DROUGHT FLOOD POLLUTION PROTECT

K	T	C	T	B	K	B	O	P	L
X	M	P	R	H	N	F	O	E	B
E	B	G	C	K	G	L	K	K	L
N	A	U	U	I	L	U	M	J	M
U	M	L	E	U	G	V	O	F	M
T	C	E	T	O	R	P	D	R	T
K	U	I	J	M	F	L	O	K	D
T	O	G	X	N	B	Y	O	J	S
N	F	L	B	I	G	Q	L	U	N
Z	W	D	R	F	O	I	F	L	Z

STATES OF MATTER

KEYWORDS: states of matter solid liquid gas

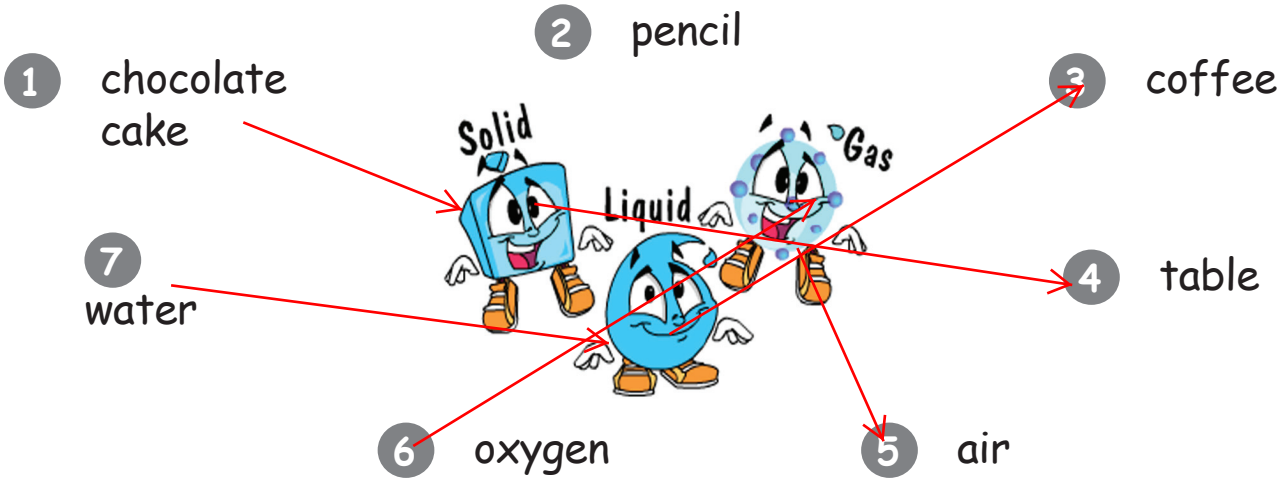


Everything around you is **matter**. There are three kinds of **matter**. They are **liquid**, **solid** and **gas**.
Chocolate cake is **matter** and so are you!
We call them the three **states of matter**.
Look at the whiteboard and see how they are different.

Task 1: NOW IT'S YOUR TURN!

Math the words with the correct states of matter.

Is it a liquid, a solid or a gas?



Task 2: NOW IT'S YOUR TURN!

Multiple Choice! Choose the correct answer. Is it a, b or c?

1 There are ..... kinds of matter.

a) 2 b) 3 c) 4

2 The states of matter are ..... .

a) water, gas and solid b) liquid, air and solid c) solid, liquid and gas

3 Water is a ..... .

a) gas b) liquid c) solid

4 Air is a ..... .

a) gas b) liquid c) solid

5 Ice is a ..... .

a) gas b) liquid c) solid

Task 3: CAN YOU DRAW?

Draw a picture of a solid, a liquid and a gas. Label your picture.

.....	.....	.....

Task 4: LET'S WRITE!

Complete the sentences with words from Page 1!

There are ..... kinds of matter.

They are ....., ...

and ..... . We call them the 3 .....

of ..... .

Task 5: LET'S TALK!

Ask and answer the following questions!

What are the 3 states of matter?

What is water?

What is ice?

Is plastic a gas?

Is your desk a solid?

They are...

It's a ...

No it isn't. It's a ...

Yes, it is.

CHANGES OF STATE

KEYWORDS: change, heat, melt, cool, freeze, gas, evaporate, condensation

There are 3 changes.

Evaporate is to change liquids to gas by heating.

Melt is to change solids into liquids by heating.

Freeze is to change liquids into solids by cooling.

Hello! Today we are going to talk about how things **change**. For example, how water **changes** from a liquid to a solid or to a gas state. This is a **change of state**. Let's look at the whiteboard.

Ah... So if we **heat** water, it turns to water vapour. If we **heat** ice, it turns to water and if we **cool** water, it turns to ice.

Also a gas can turn back into a liquid. We call it **condensation**. Look at your cold water bottle next time you take it out into the hot air.

Task 1: NOW IT'S YOUR TURN!

Match the boxes to make correct sentences.

1	If we heat water,	a)	it evaporates.
2	If we cool water,	b)	it melts.
3	If we heat ice,	c)	it turns to ice.
4	If we heat a liquid,	d)	it freezes.
5	If we cool a liquid,	e)	it turns to water vapour.
6	When gas turns back into a liquid	f)	it is called condensation.

Task 2: MULTIPLE CHOICE!

Choose the correct answer? Is it a, b or c?

1 We heat water and it changes to water vapour. This is called ..... .

a) evaporation **b)** melting **c)** freezing

2 When we ..... water it freezes.

a) heat **b)** melt **c)** cool

3 When we ..... ice it melts.

a) cool **b)** heat **c)** freezing

4 Changing liquids into solids by cooling is called ..... .

a) heating **b)** melting **c)** freezing

Task 3: LET'S DRAW!

Read the sentences and draw a picture. Label the picture.

It is a hot day. The sun is shining. There is a river.
A boy is next to the river. He is holding an ice cream.

What is happening to the river?

What is happening to the ice cream?

Task 4: PAIR WORK!

Ask and answer the following questions.

What happens if you heat water?

What happens if you heat ice?

What happens if you cool water?

If you heat... it...

METALS

KEYWORDS: malleable ductile magnetic conduct pipe wire

Hello! Today we are looking at metals. What can metals do, Faisal?

Different metals can do different things. They can be **malleable**, **ductile**, **magnetic** and can conduct electricity.

Can you explain them to me? I don't know these words!

If a metal is **malleable**, it is easy to bend or shape. If it's **ductile**, it is easy to pull and make into a **pipe** or **wire**. A **conductor** can pass electricity easily.

And if it's **magnetic**, a magnet can attract it. Thank you, Faisal!

Task 1: NOW IT'S YOUR TURN!

Write about these metals.

1 A ..... is m ..... .

2 C ..... is a good c ..... .

3 S ..... is m ..... .

4 I ..... is d ..... .

I think my desk is metal. It's not aluminium. It is steel!

Task 2: MULTIPLE CHOICE!

Choose the correct answer? Is it a, b or c?

I'm steel. You can put rubbish in me!

1 A ductile metal can make ..... .

a) pipes and wire **b)** dinner **c)** electricity

2 Copper is malleable and ..... .

a) ductile **b)** a conductor **c)** both a and b

3 A malleable metal is easy to ..... .

a) twist **b)** bend and shape **c)** bend

4 Aluminium is ..... .

a) magnetic **b)** malleable **c)** both a and b

Task 3: LET'S READ AND DRAW! WORK IN PAIRS.

Read the titles and draw an object to match each title.

A ductile metal.	A malleable metal
A metal conductor.	A magnetic metal.

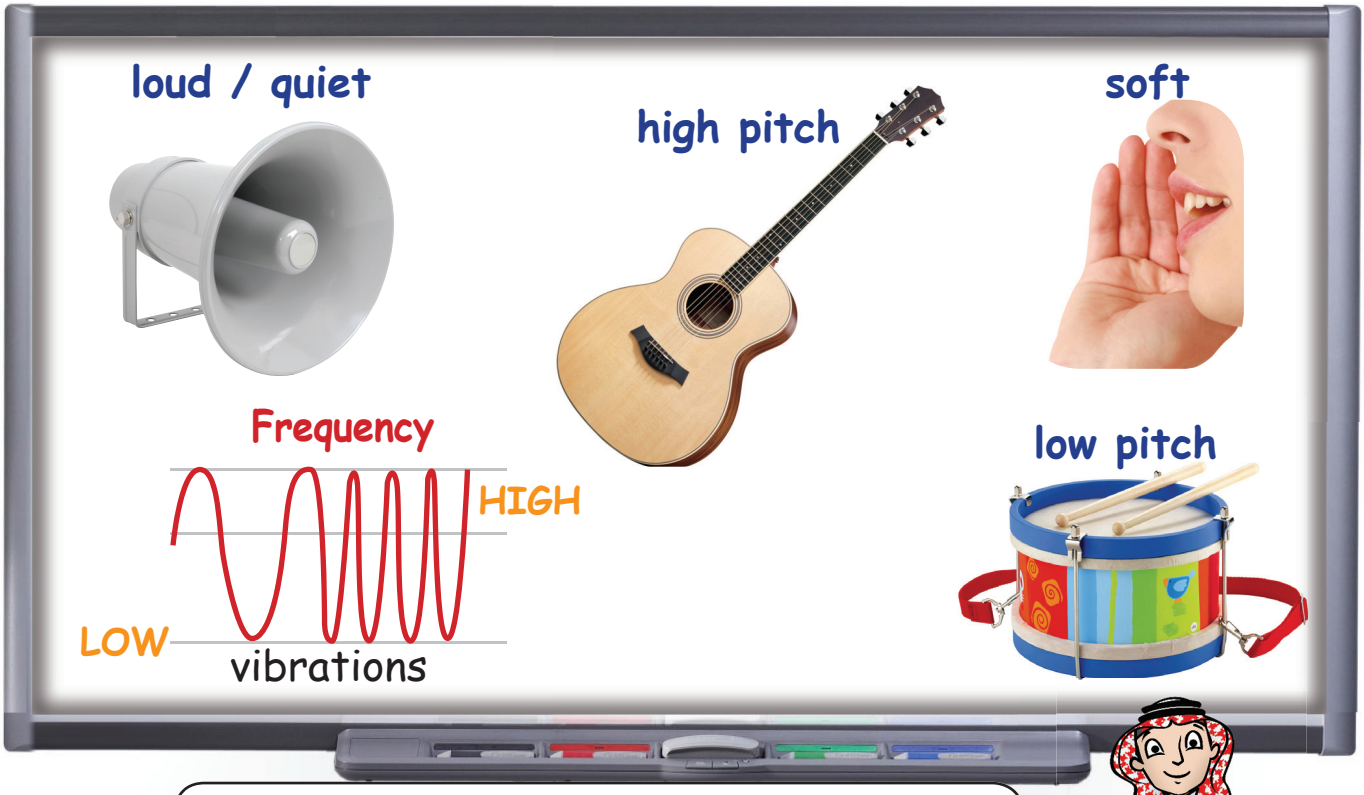
Task 4: ASK YOUR PARTNER!

Ask your partner the following questions and then write down the answer!

1. Can you name a metal conductor? .....
2. Is aluminium foil a conductor? Yes, it is / No, it isn't
3. Can you name 3 malleable metals? A ..... ,
   g ..... and c ..... .

HOW IS SOUND MADE?

KEYWORDS: sound pitch vibrations loudness loud soft quiet



Hello! This week we are studying **sound**.
Faisal, are you listening?
Can you tell me about sound?

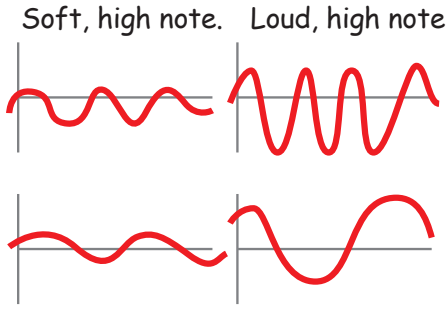
Sounds are vibrations or small fast movements that can travel through solids, liquids and gases.

The **pitch** of a sound is how much it **vibrates**. High sounds vibrate faster than low sounds. And the **loudness** of a sound is how loud or **soft** it is. If it is soft, we say it is **quiet**. Look at the smartboard!

Task 1: NOW IT'S YOUR TURN!

Fill in the gaps.

1. ..... are vibrations that can travel through ..... , liquids and ..... .
2. The pitch of a sound is how much it ..... .
3. A police siren is l ..... .
4. But a bicycle is q ..... .



Task 2: MULTIPLE CHOICE!

Choose the correct answer? Is it a, b or c?

1. Sounds are ..... that can move through different materials.

   a) vibrations **b)** colours **c)** lights

2. The pitch of a sound can be ..... .

   a) fat or thin **b)** high or low **c)** tall or short

3. The loudness of a sound is how ..... it is.

   a) quiet **b)** high or low **c)** loud or soft

4. If a sound is soft, we can say it is ..... .

   a) noisy **b)** quiet **c)** loud

Task 3: LET'S TALK!

Ask and answer the following questions!

How is sound made?

Can sounds travel through water?

If it vibrates a lot, we say it is...

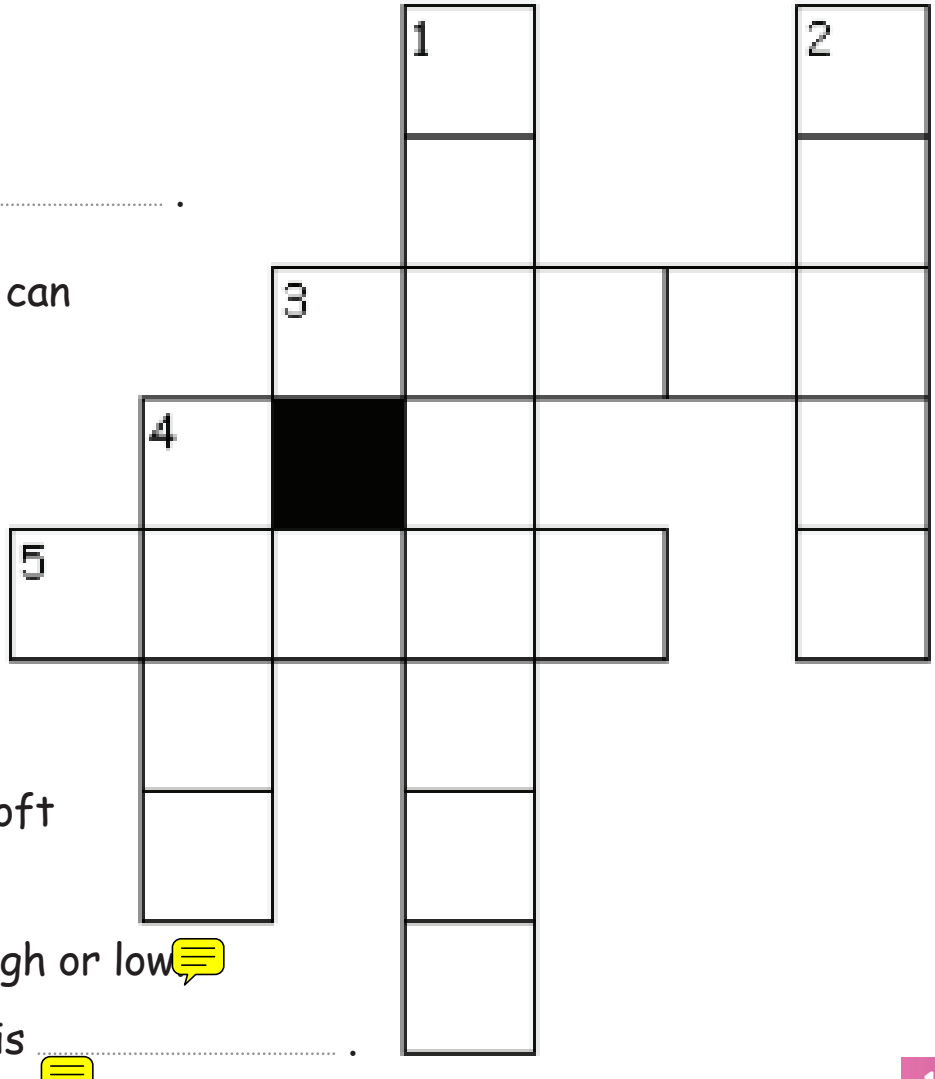
Task 4: PUZZLE TIME!

Complete the sentences and then write the words in the boxes.

Across

3) A bicycle is ..... .

5) Vibrations that you can hear make a ..... .



Down

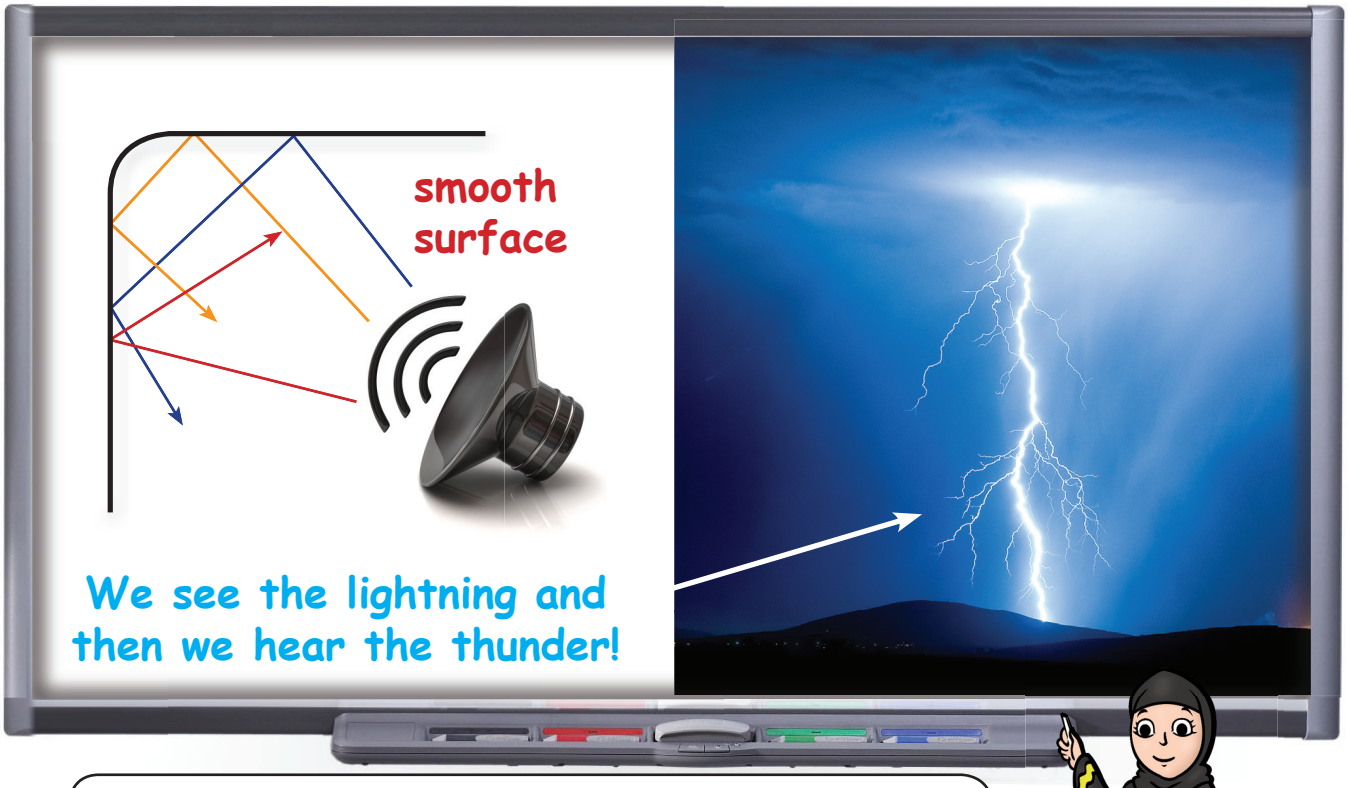
1) How loud or soft a sound is

2) This can be high or low

4) An aeroplane is ..... .

SPEED OF SOUND AND REFLECTION

KEYWORDS: echo reflect/reflection lightning thunder



Hello! Today we are looking at echoes and the speed of sound.

Sara, can you tell me more, please!

Sound and light **reflect** from surfaces. That means they come back. The **reflection** of sound is an **echo**. Smooth surfaces make strong echoes.

Sound is fast but light is faster. Sometimes when it rains, there is **thunder** and lightning. We see the **lightning** first and then we hear the sound of thunder.

Look at the whiteboard!

Task 1: NOW IT'S YOUR TURN!

Fill in the gaps.

1. ..... and light ..... from surfaces.
2. The reflection of sound is an ..... .
3. ..... surfaces make ..... echoes.
4. The speed of ..... is faster than the speed of ..... .

Task 2: MULTIPLE CHOICE!

Choose the correct answer? Is it a, b or c?

1. ..... reflect from surfaces.

   a) Sound **b)** Light **c)** both a and b

2. ..... surfaces make strong echoes.

   a) Soft **b)** Smooth **c)** Light

3. We ..... the lightning first then we hear the thunder.

   a) eat **b)** see **c)** hear

4. The speed of sound is ..... than the speed of light.

   a) hotter **b)** faster **c)** slower

Task 3: LET'S TALK!

Ask and answer the questions.

Where does sound reflect from?

It reflects from...

Do smooth surfaces make strong echoes?

Yes, they do!

What is an echo?

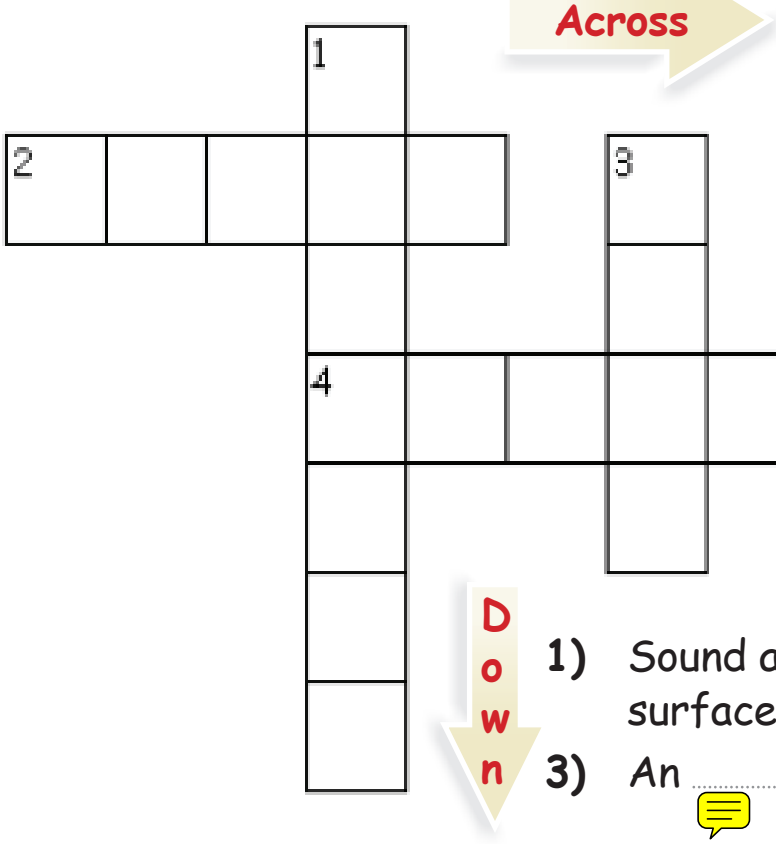
An echo is a reflection of sound.

Which is faster, speed or light?

...is faster.

Task 4: PUZZLE TIME!

Complete the sentences and then write the words in the boxes.



Across

2) The ..... of light is faster than sound.

4) We see the ..... before we hear the thunder.

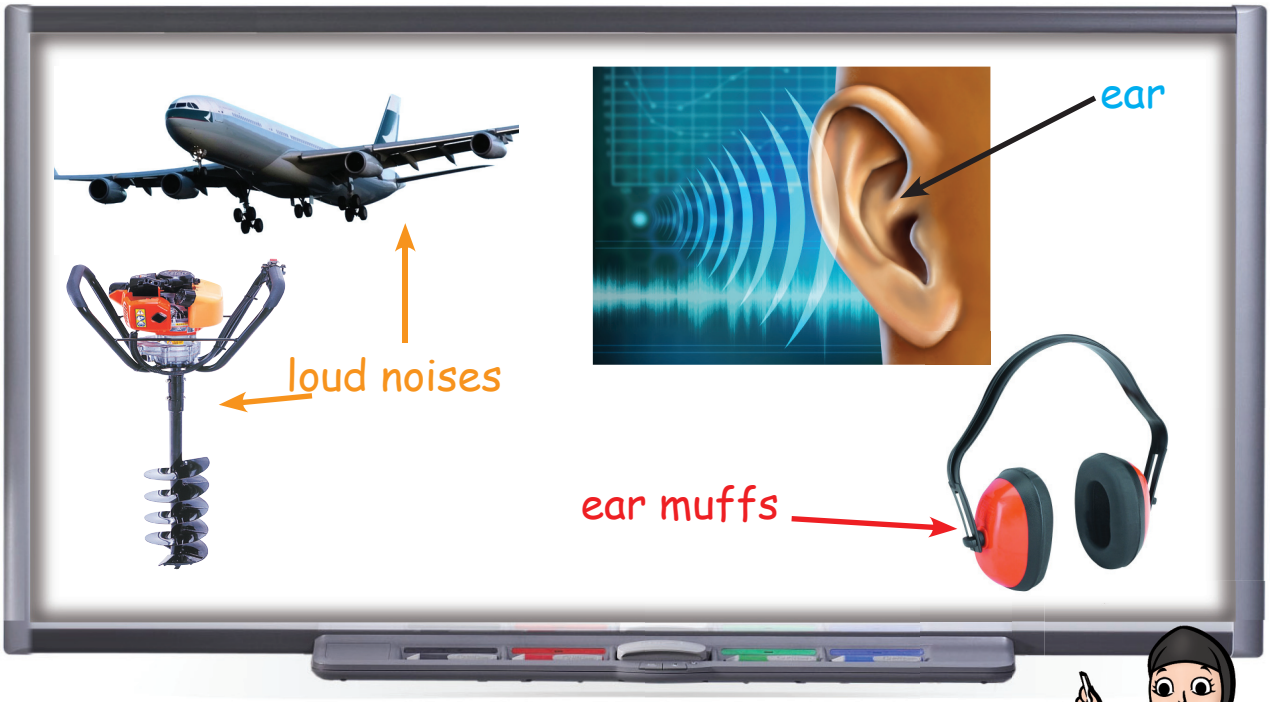
Down

1) Sound and light ..... from surfaces.

3) An ..... is a reflection of sound.

HEARING SOUND

KEYWORDS: ear hear ear muffs



Hello! Last week we studied sound and this week we are studying how we **hear** sound.
Fatima, can you tell me more, please!

We **hear** sounds with our **ears**. Loud sounds are bad for our ears. We need to wear **ear muffs**.
Some sounds are nice, but some sounds are horrible.

I like the sound of the sea, but I don't like the sound of aeroplanes!

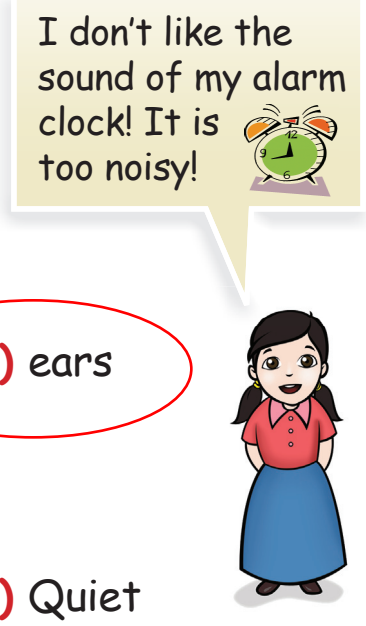
Task 1: NOW IT'S YOUR TURN!

Fill in the gaps.

1. We hear sounds with our ..... .
2. ..... noises are bad for our ..... .
3. We need ..... to protect our ears.

Task 2: MULTIPLE CHOICE!

Choose the correct answer? Is it a, b or c?



1. We hear sounds with our ..... .

   a) nose **b)** mouth **c)** ears

2. ..... noises are bad for our ears.

   a) Loud **b)** Soft **c)** Quiet

3. Ear ..... protect our ears. They stop them getting hurt.

   a) socks **b)** muffs **c)** gloves

4. I ..... the sound of rain, but it doesn't rain much in Doha!

   a) like **b)** eat **c)** wear

Task 3: LET'S TALK!

Ask and answer the following questions!

How do we hear sounds?

Are loud noises good for our ears?

How can we keep our ears safe?

What sounds do you like?

We hear sounds with our...

No, they aren't! They are...

We can protect our ears with.

I like....but I don't like...

Task 4: LET'S READ AND DRAW.

Read the sentences and draw the picture.

It is a hot and noisy day in Doha. Some men are building a new road. They are using very loud machines. The men are wearing ear muffs. One man doesn't have any ear muffs. Do you think he is happy? Why not?

Corrections

Page NO.	Note	Amendment

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