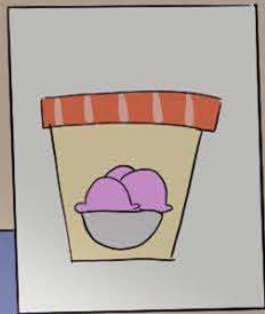
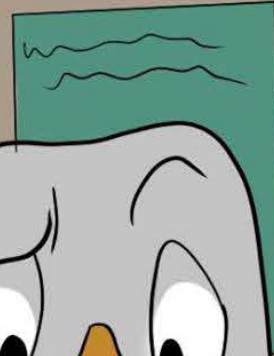
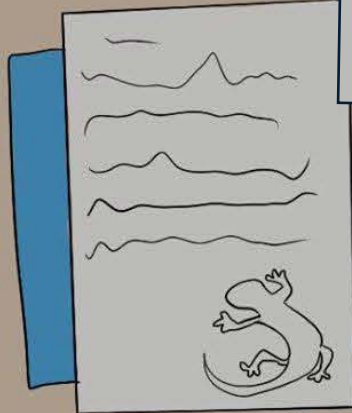


3RD - 4TH GRADE
ACTIVITY BOOK



MIGIZI

MIGIZI GIKINAWAABI

“Eagle Learns by Observation”



MEDICAL SCHOOL

UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

DULUTH CAMPUS



MIGIZI

MIGIZI GIKINAWAABI

“Eagle Learns by Observation”

Acknowledgments

Project Director

Anna Wirta Kosobuski
Bois Forte Band of Chippewa

Education Content Expert

Rachel King
Red Lake Band of Chippewa Indians & Dine'

Illustrator

Jordan Rodgers
Oglala Sioux

Graphic Artist

Louise Isham
Bois Forte Band of Chippewa

Culture and Language Advisor

Harvey Thompson
Bois Forte Band of Chippewa

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Boozhoo! Migizi nindizhinikaaz.
Migizi nindoodem, Asabekone
Zaaga'iganing nindoonjibaa.

*"Hello my name is Eagle. I am Eagle
Clan. I am from Nett Lake."*

Please join me throughout this
activity book...

*Migizi Gikinawaabi
(Eagle Learns by Observation).*

Other Important Words to Know

- Gaawiin-gegoo - Zero
- Bezhigh - One
- Niizh - Two
- Niswi - Three
- Niiwin - Four
- Naanan - Five
- Ningodwaaswi - Six
- Niishwaaswi - Seven
- Nishwaaswi - Eight
- Zhaangaswi - Nine
- Midaaswi - Ten



 Makwa

Introduction: Boozhoo!

_____ nindizhinikaaz.
 _____ nindoodem.
 _____ nindoonjibaa.

Boozhoo - Hello
 Migizi - Eagle
 Nindizhinikaaz - My Name Is
 Nindoodem - My Clan Is
 Asabekone Zaaga'iganing - Nett Lake
 Nindoonjibaa - I Am From

Henry System of Fingerprint Identification

We are all born with our own unique set of fingerprints, as our bodies change over time our fingerprints stay the same. Even identical twins (who share DNA) do not share fingerprints.

The Henry System gives five basic pattern types:



LEFT

The ridges enter from one side (left), loop around, and return to the same side.



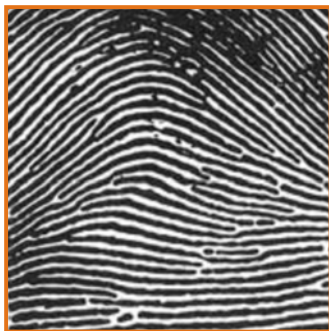
RIGHT

The ridges enter from one side (right), loop around, and return to the same side.



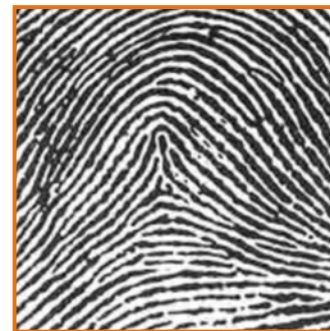
WHORL

The ridges are in circular pattern.



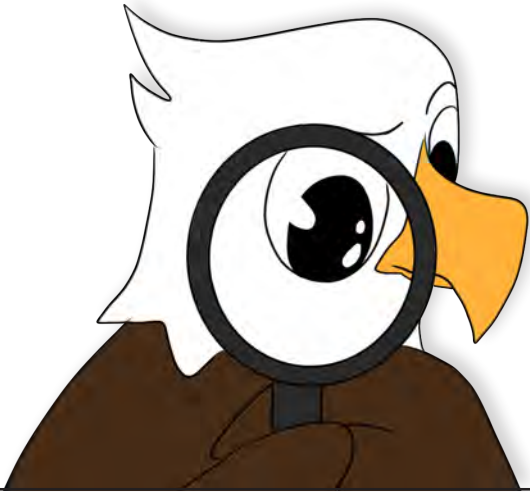
ARCH

The ridges enter from one side, rise in the center, and exit on the other side.



TENTED ARCH

At the center of the arch, a three-pronged shape can be found.



Now, all you Investigators,
grab your inkpad, paper, and
magnifying glass!

Ask 3 of your friends to take their
fingerprints and then do yours!

Name: _____

Type of Pattern: _____

Name: _____

Type of Pattern: _____

Name: _____

Type of Pattern: _____

Name: _____

Type of Pattern: _____

Did you know?

Our fingerprints are developed 3 months before we are born, as we get older the ridges might wear down but they ALWAYS grow back!

Our skin is an amazing organ that will regenerate throughout our lives.



Dekaag (Ice Cream) in a Baggie

What do you need?

$\frac{1}{2}$ cup of milk

2 tablespoons of sugar

1 pinch of salt

3 cups of ice

1 gallon size Ziploc bag

$\frac{1}{2}$ cup of heavy cream

$\frac{1}{4}$ teaspoon of vanilla

1 sandwich size Ziploc bag

$\frac{1}{2}$ cup of rock salt

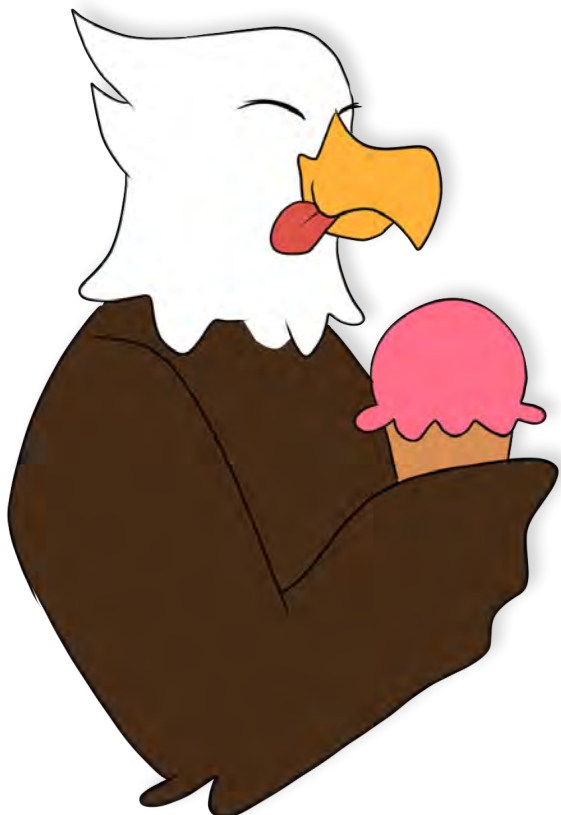


Try adding fresh or thawed frozen fruit to your recipe!
Chop up a few strawberries, blue berries, raspberries... Get creative!



Directions:

1. Start by mixing the milk, heavy cream, sugar, vanilla and salt into the sandwich sized baggie (if you choose to get fancy, you can add your fruit to the baggie at this time as well). Seal the baggie and set aside.
2. Now, fill the gallon sized baggie with the ice and rock salt.
3. Place the smaller cream filled baggie into the gallon sized ice filled baggie, remove as much air as you can and seal up the gallon sized baggie.
4. Wrap the bag in a towel and **SHAKE AS HARD AS YOU CAN** for about 10 minutes!
5. Carefully open the large baggie, remove your ice cream filled baggie and **ENJOY!**



What is the Iki-dowin (Word)?

Use the clues to complete the word.
The first one is done for you.

Hint: You'll find the answers to most of these somewhere in this book.

Practice Level:

1. Hello in Ojibwe: B O O Z H O O
2. Type of fingerprint: W _ _ _ _
3. The number 3 in Ojibwe: N _ S _ _

Level 3: Who! Challenge yourself!

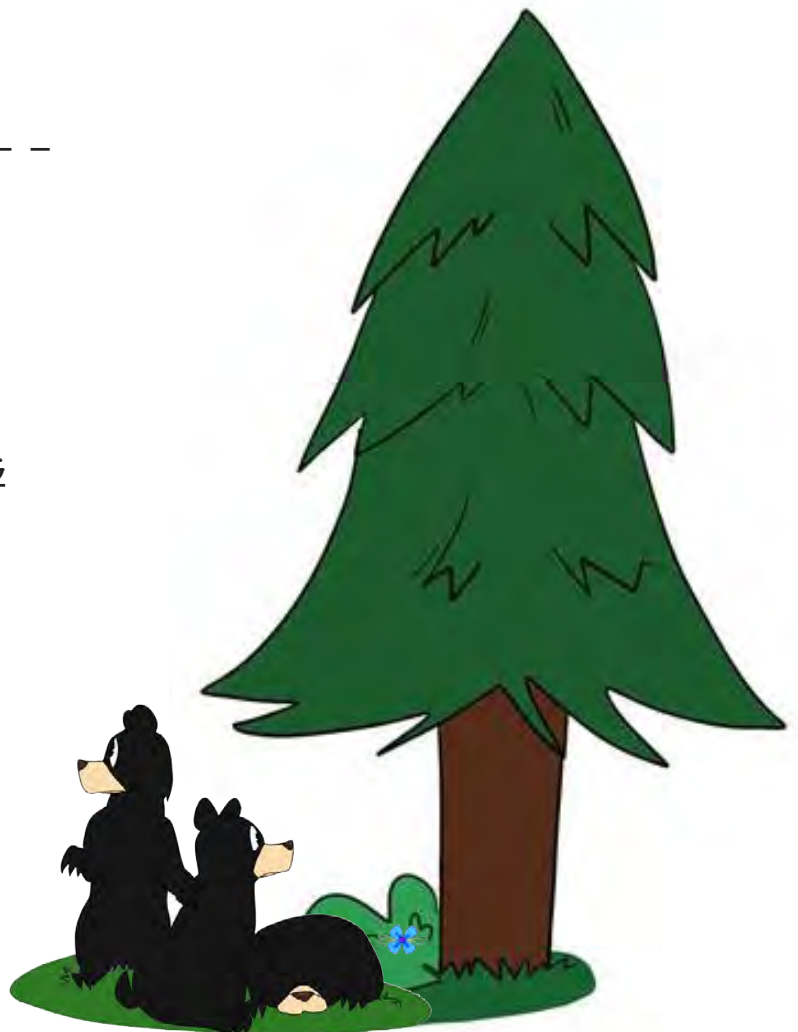
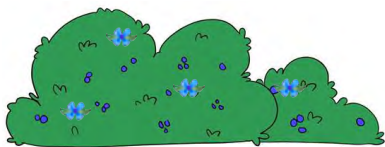
1. Eagle in Ojibwe: _ _ _ _ Z _
2. Regeneration: R _ _ _ _ _
3. Researcher:
I _ V _ _ _ _ _

Level 1: You got this!

1. Pollinators: B _ _ _
2. Brain in Ojibwe: N _ _ _ _ _
3. Collected information: D _ _ _

Level 2: Making you think harder!

1. A car's pathway: _ _ A _
2. Ice cream in Ojibwe: _ _ _ _ _ G
3. A 5 pointed sea critter:
_ I _ _ F _ _





Cryptogram Riddles and Codes

Solve the cryptogram riddles by using the code below.
The first riddle is done for you.

What can run but can't walk? $\frac{W}{23} \frac{A}{1} \frac{T}{20} \frac{E}{5} \frac{R}{18}$

What is made that can't be seen? $\frac{\quad}{14} \frac{\quad}{15} \frac{\quad}{9} \frac{\quad}{19} \frac{\quad}{5}$

What has no weight but can sink a ship? $\frac{\quad}{2} \frac{\quad}{9} \frac{\quad}{7} \frac{\quad}{8} \frac{\quad}{15} \frac{\quad}{12} \frac{\quad}{5}$

What belongs to you but is used more by others? $\frac{\quad}{25} \frac{\quad}{15} \frac{\quad}{21} \frac{\quad}{18} \frac{\quad}{14} \frac{\quad}{1} \frac{\quad}{13} \frac{\quad}{5}$

What goes up and down without ever moving? $\frac{\quad}{1} \frac{\quad}{19} \frac{\quad}{20} \frac{\quad}{1} \frac{\quad}{9} \frac{\quad}{18} \frac{\quad}{3} \frac{\quad}{1} \frac{\quad}{19} \frac{\quad}{5}$

What starts with the letter E, ends with the letter E, but only has one letter in it?
 $\frac{\quad}{5} \frac{\quad}{14} \frac{\quad}{22} \frac{\quad}{5} \frac{\quad}{12} \frac{\quad}{15} \frac{\quad}{16} \frac{\quad}{5}$

A	B	C	D	E	F	G	H	I	J	K	L	M
1	2	3	4	5	6	7	8	9	10	11	12	13

N	O	P	Q	R	S	T	U	V
14	15	16	17	18	19	20	21	22

W	X	Y	Z
23	24	25	26





Niinindib (Brain) Teasers 1.0

Can you solve these visual word puzzles?

Examine the words and how they are used: color, patterns, where they are placed.


The first one is done for you!

1. STOOD
miss

Answer: Misunderstood

2. EGG EGG
HAM

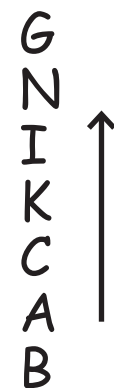
Answer: _____

3. 

Answer: _____

4. WALKING
ICE

Answer: _____

5. 

Answer: _____

6. 

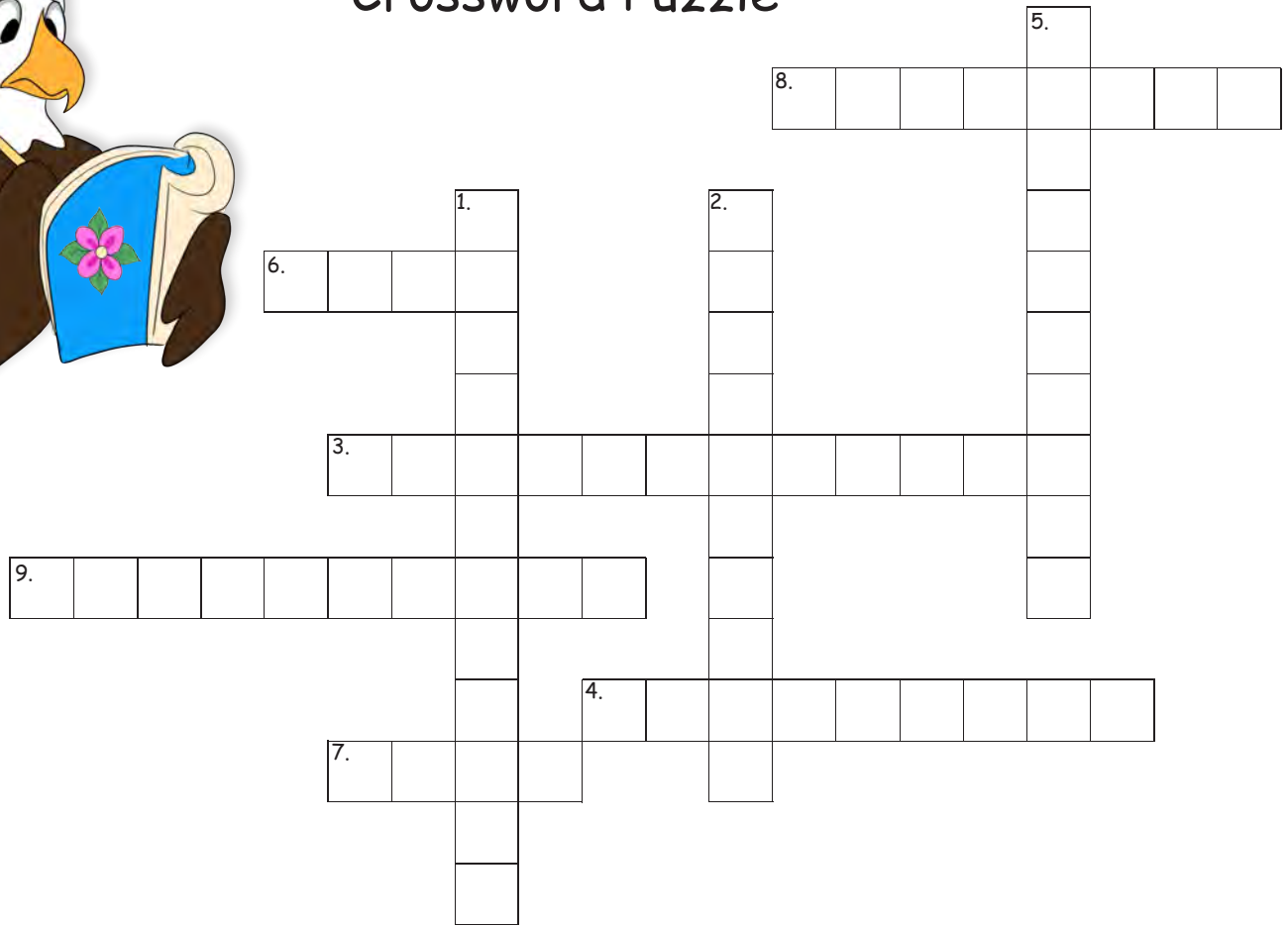
Answer: _____

7. MILLION

Answer: _____



Crossword Puzzle



Directions:

Use these words to solve the puzzle:

**Analyzed, Questions, Plan, Investigator, Observations,
Researcher, Hypothesis, Data, Conclusion**

1. A person who uses facts in order to learn what has happened or what will happen in a specific situation or event is called an _____.

2. Another name that can be used for an investigator is a _____.

3. _____ are based on facts and can be proved by testing.

4. Researchers ask _____ to guide their investigations. Who? What? When? Where? Why? How?

5. When researchers make an educated guess that can be tested, it is called a _____.

6. Investigators _____ how to gather evidence to answer the questions.

7. The information gathered and then recorded to test their hypothesis is called _____.

8. The data is then _____, looked at closely and researchers ask, "What does the data tell me?"

9. Now, the researcher is ready to draw a _____ based on the results of the investigation.



Peanut Buttery Aamoo (Bees)

What do you need?

- | | |
|---|--|
| 1 cup of creamy peanut butter | $\frac{1}{4}$ cup of butter, softened |
| 1 $\frac{1}{2}$ cups of graham cracker crumbs | $\frac{1}{4}$ cup sliced toasted almonds |
| $\frac{1}{4}$ cup semi-sweet chocolate | 1 cup powdered sugar |



Three easy steps to create these bumble bee treats that will leave your taste buds buzzing for more!



1. Beat peanut butter, butter and sugar in a large bowl with a mixer. After this combination is blended, add the graham cracker crumbs... Mix well!
2. Now, shape into 1-inch ovals (Hint: a tablespoon works well) for the bumble bees' bodies.
3. Melt the chocolate in the microwave for 45 seconds. Then, carefully drizzle the chocolate across the top of the bees to create the stripes. Take the nut slices, insert them into both sides of the bees to create the wings. Let cool until chocolate firms.

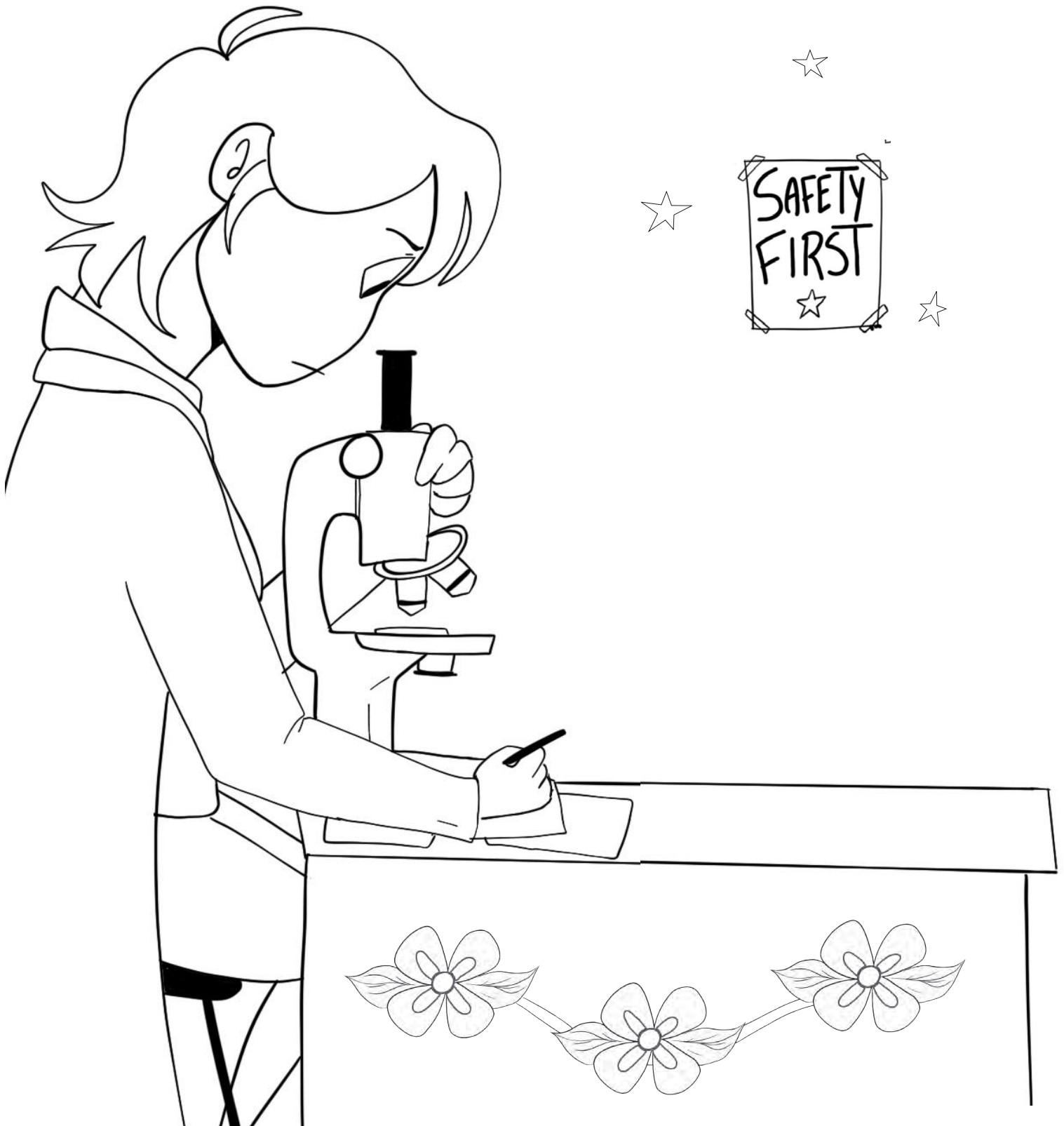
You now have tasty peanut buttery bumble bees!

HIGHLIGHT

Did you know?

What a wonderful insect! Bumblebees are larger than honeybees and are not big honey producers BUT WOW! They are **BIG TIME** pollinators! Along with other pollinators such as: butterflies, small birds, moths, beetles, bats and even mosquitoes (just to name a few), two-thirds of the world's crops depend on these small critters to transfer pollen flower parts! However, scientists agree bumblebees are **THE** most important pollinators due to fast wing beats (over 130 times per second) and large bodies!

Coloring Fun





WORD FRACTIONS



Migizi is the
NUMERATOR.

Count the vowels, this number will be the NUMERATOR.

The total number of letters is the DENOMINATOR.

Then do the same for the consonants. The first one is done for you.



Makwa is the
DENOMINATOR.

Word	# of Vowels	Fraction of Vowels	# of Consonants	Fraction of Consonants
Observe	3	3/7	4	4/7
Question				
Hypothesis				
Plan				
Analyze				
Conclusion				
Communicate				
Investigator				

Think Like an Investigator

Investigator Migizi needs your help testing types of invisible ink, experiment with the types below:



Investigator Migizi

#1. White Crayon

- Write on paper with a white crayon (invisible ink).
- Decode by using watercolor paint over the paper.

#2. Lemon Juice

- Mix lemon juice and water in a bowl (invisible ink).
- Write on paper with a Q-tip using the mixture and let it dry.
- Decode by using heat (hair dryer or heat from a light bulb).

#3. Milk

- Dip a Q-tip in milk (invisible ink) and write on paper. Let it dry.
- Decode by using heat (hair dryer or light bulb).

#4. Indentation

- Stack 2 pieces of paper and write a message while pressing hard. Remove the top sheet (invisible ink).
- Decode by lightly shading the bottom sheet with a pencil.

Which worked best?

Most visible: _____

Easiest to decode: _____

Which would you use? _____

Why? _____

Toothpick Puzzles

Level 1: Puzzle 1

Make 5  with 9 toothpicks.



Level 1: Puzzle 2

Make 2  with 5 toothpicks.




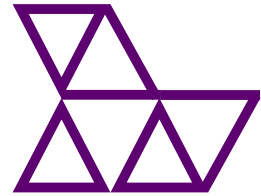
Level 2: Puzzle 3

Move 2 toothpicks to form 4 .




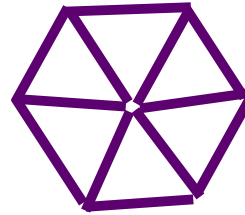
Level 2: Puzzle 4

Remove 4 toothpicks and leave 3 .





Level SUPER HARD: Puzzle 5

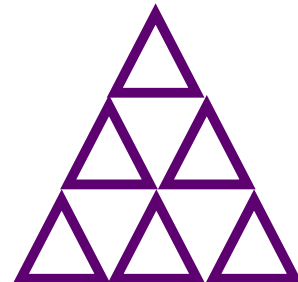
Move 4 toothpicks to make 3 .



Level EXTRA HARD: Puzzle 6.

Below are 13 s - 9 small, 3 medium, and 1 large.

Remove 3 toothpicks to leave 4 .



Super Stars of Limb Regeneration...

☆ The Salamander! ☆

Unlike us, when a salamander loses a limb,
IT GROWS IT BACK!

When we get wounds, our body generates scars.
But when a salamander loses a limb or tail, a
reaction is triggered at the wound site... **BOOM!**

Cells around the area of the missing limb are
assigned different jobs and begin to form nerves
and muscles and the stump begins to grow... existing cells
go back to the "growing state" like when it was a developing
salamander --> the cells move forward through the wound
forming **BLASTEMA** (cell masses that are able to grow and
regenerate), which begins forming a new limb. This process
can take about one year for a small limb and up to 10 years for
larger limbs!

Scientists are still trying to figure out the salamander's
fascinating ability to regenerate limbs. This knowledge would
help heal many health conditions, including brain and spinal cord
injuries, that today are incurable!



Sonny the Salamander

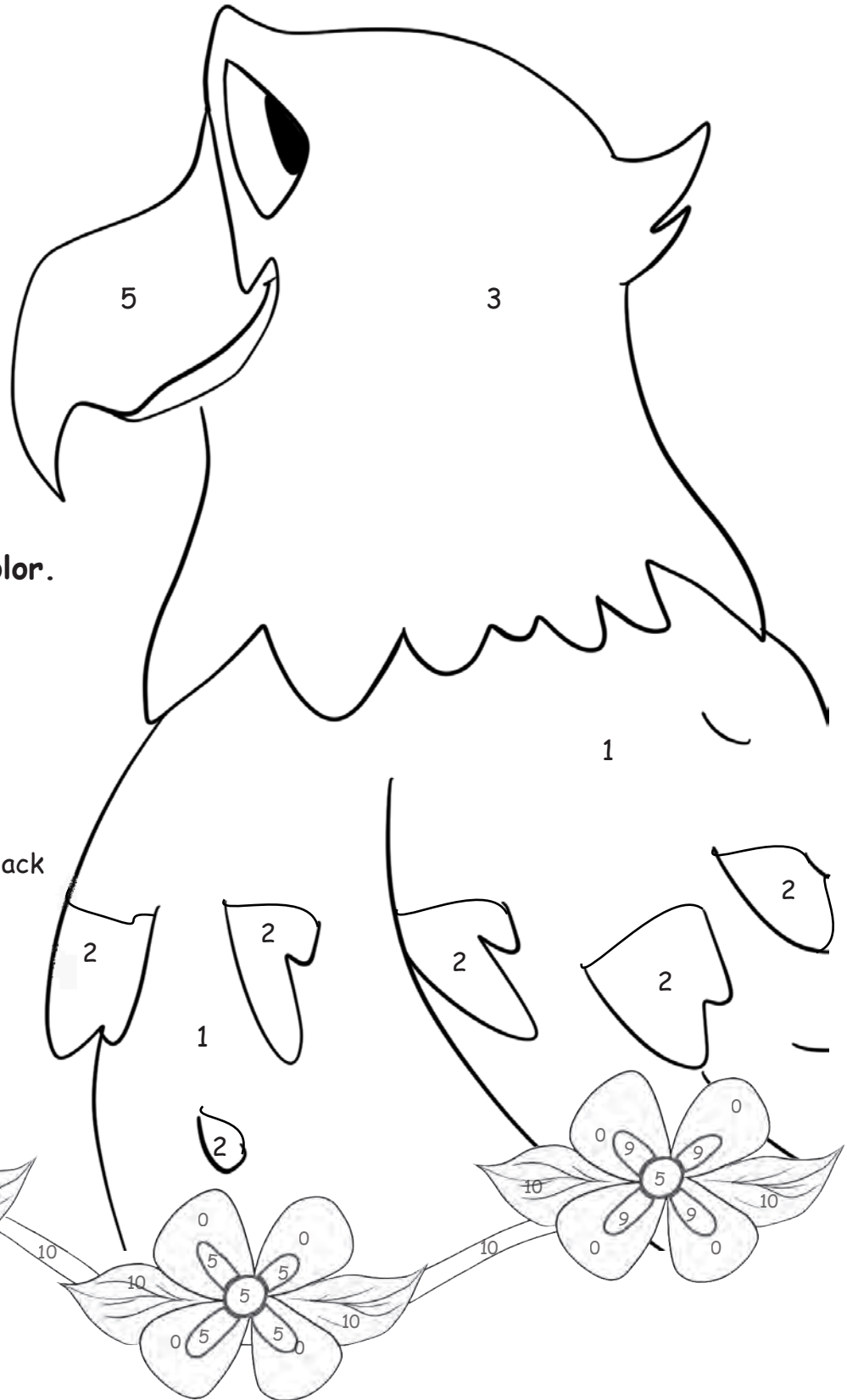


Other animals that can regrow limbs:

- ☆ STARFISH
- ☆ SPIDERS
- ☆ FLATWORMS
- ☆ SEA CUCUMBERS
- ☆ ...and some LIZARDS



Matching Fun - Color by Number



Color Migizi with the matching number's color.

- Naanan (5) - Yellow
- Bezbig (1) - Brown
- Midwaasi (10) - Green
- Niswi (3) - White/Gray
- Gaawiin-gegoo (0) - Blue
- Niizh (2) - Dark Brown/Black
- Nishwaaswi (8) - Purple
- Zhaangaswi (9) - Pink

Word Search

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

LIZARDS
 SCARS
 SEA CUCUMBERS

NERVES
 SALAMANDER
 WOUND

REGENERATE
 SPIDERS
 STARFISH



Beading Daisy Chains

What do I need?

3 colors of beads (petals, center bead, and connecting beads)

Nylon thread

Beading needle

Steps:

1. Thread the needle and tie a knot at the end of thread.

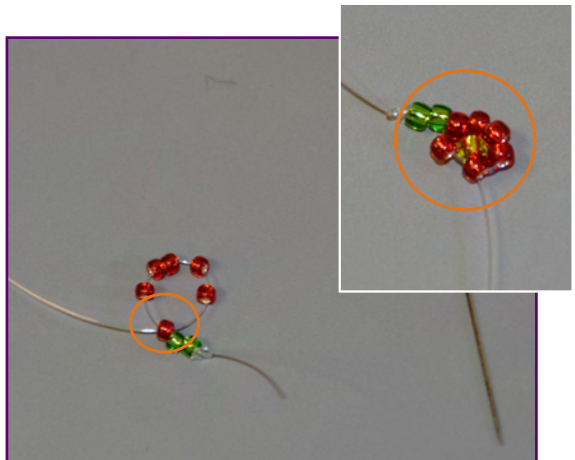
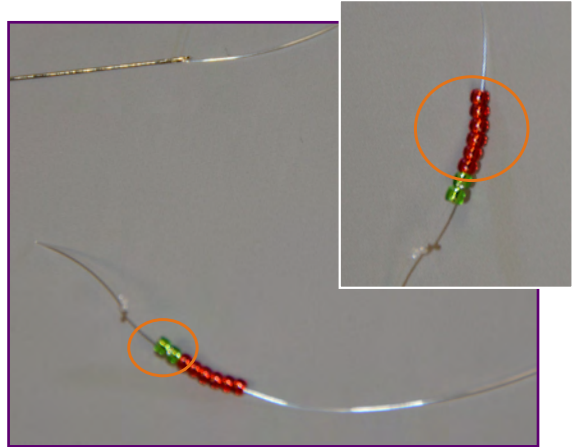
2. Put 2 beads on the thread (connecting beads).

3. Add 6 beads (petal beads), then put the needle through the first petal bead and pull through. Now you have a circle.

4. Add the center bead, count 2 beads to the left and pull your needle through the 3rd bead.

5. Pull tight!!! You have your first daisy!!!

Now start the pattern again! Make your chain as long or short as you want.





Niinindib (Brain) Teasers 2.0

Can you solve these visual word puzzles?

Examine the words and how they are used: color, patterns, where they are placed. These are a little harder than the ones you did earlier.

1. cycle
cycle
cycle

Answer: _____

2. BIRD

Answer: _____

3. S
L
O
W

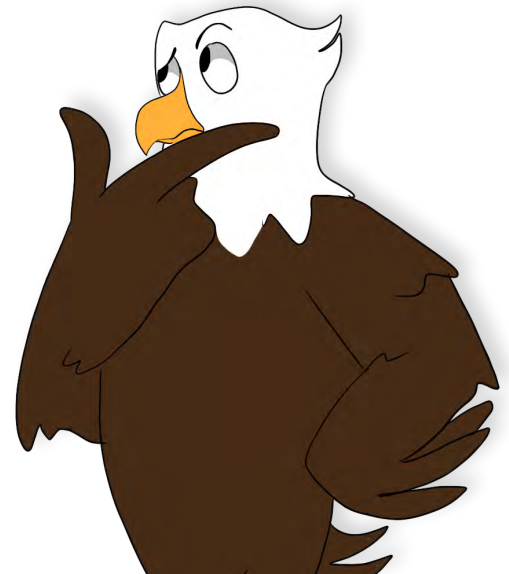
Answer: _____

4. SAND

Answer: _____

5. GRASS

Answer: _____



Robotic Hand

What do you need?

- Pencil
- Cardboard
- Scissors
- 10 straws
- Yarn
- Thick rubber bands
- Glue
- Duct tape

#1



#2



#3



#4



#5



1. Start by tracing your hands on the cardboard... Cut them out!
2. On your newly cut hands, mark where the joints and knuckles are, give a score on the backside of the hand to allow proper bending.
3. Now you need to measure where your fingers bend on the straws, then cut out 'V' shape for joints to bend.

Tape the straws in place starting at the tip of the finger, ending at the wrist, glue them down.

Take your yarn and run it through each straw, leave a long tail out of both the top and bottom of the straws.

4. Grab your rubber bands, cut them and tie one end to the yarn at the end of each finger. Turn the hand over so the back of the hand is facing up, glue the rubber bands flat to the fingers.
5. After all the glue has had time to dry.... Give your hand a try! You see now your tendons, muscles, and bones work together with your motions!

Addition Fill In

Fill in the blank squares to make the number sentences true.
The first one is done for you.

4 + 2 = 6

+ +

+ =

+ =

1 9

= =

2

=

+ = 9

2 + =

+

2

=

+

=

=

+ = 7



+ = 9

+ =

2 1

= +

+ 1 =

+ 7 =

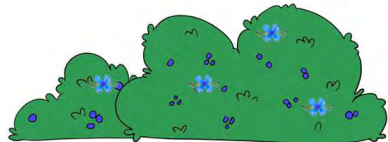
+ =

+ = 2

=

=

+ = 8



Sudoku Fun!

Find missing numbers in the 9 by 9 grid.

Here are the rules:

- Each row, column, and box must contain all numbers from 1 - 9.
- Each number can only appear once in a row, column, or box.

PUZZLE 1

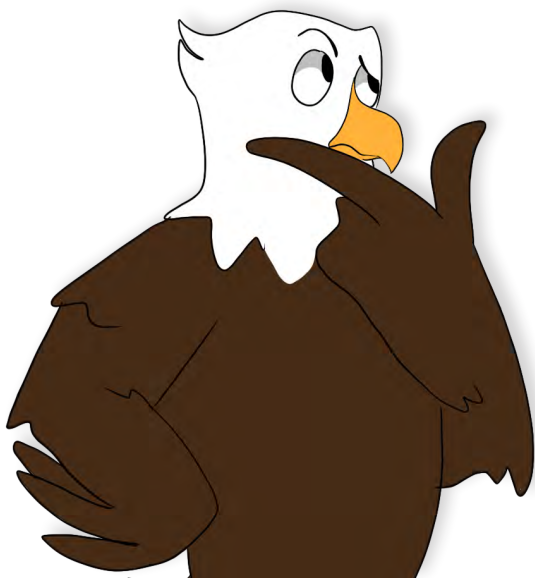
8	6	7	5	3	4	2	1	9
1		9	8		2	3		7
	3	5			7			6
6		4	7	8	5	9	3	2
9		3	2	4	1		7	8
7	8		6	9	3	1	4	5
	7	1	4		9	8		3
4	2		3	7	6		9	1
3	9		1		8	7		4

PUZZLE 2

8		9	3		6	7	5	2
3		2	1		5	8		4
	4	7	8	2	9		6	3
2		5			8	6	3	
1		6	7		3	2		8
4		3	9		2	5		7
7	3			8	4		2	6
6		4	2	9	7	3	8	
	2		6	3			7	

PUZZLE 3

9	2	4	6	3	5	7	8	1
7		5	1		8	9		2
	8	1			9			4
8		3	4	5	7	1	2	6
5		6	2	8	1		4	9
4	1		3	9	6	8	7	5
	4	7	5		2	6		8
2	5		8	6	3		1	7
1	6		9		4	2		3



Puzzle Solution

Pg. 6 What is the Ikidowin (Word)?

Level 1

1. Bees
2. Niinindib
3. Data

Level 2

1. Road
2. Dekaag
3. Starfish

Level 3

1. Migizi
2. Regrow
3. Investigator

Pg. 7 Riddles and Codes

1. Water
2. Noise
3. Big Hole
4. Your name
5. A Staircase
6. Envelope

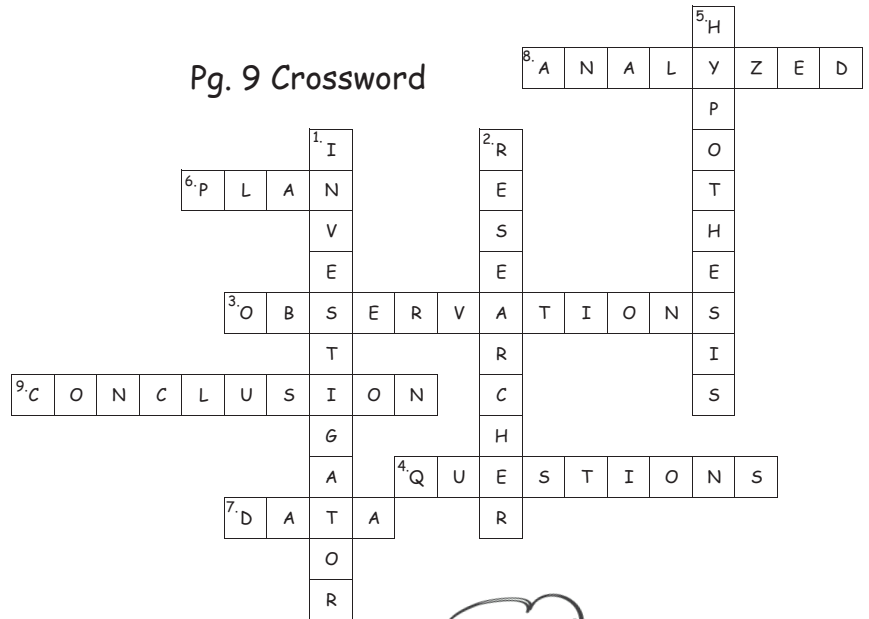
Pg. 8 Brain Teasers 1.0

1. Misunderstood
2. Green Eggs and ham
3. Fooling around
4. Walking on thin ice
5. Backing up
6. X marks the spot
7. One in a million

Pg. 12 Word Fractions

Word	# of Vowels	Fraction of Vowels	# of Consonants	Fraction of Consonants
Observe	3	3/7	4	4/7
Question	4	4/8	4	4/8
Hypothesis	3	3/10	7	7/10
Plan	1	1/4	3	3/4
Analyze	3	3/7	4	4/7
Conclusion	4	4/10	6	6/10
Communicate	5	5/11	6	6/11
Investigator	5	5/12	7	7/12

Pg. 9 Crossword

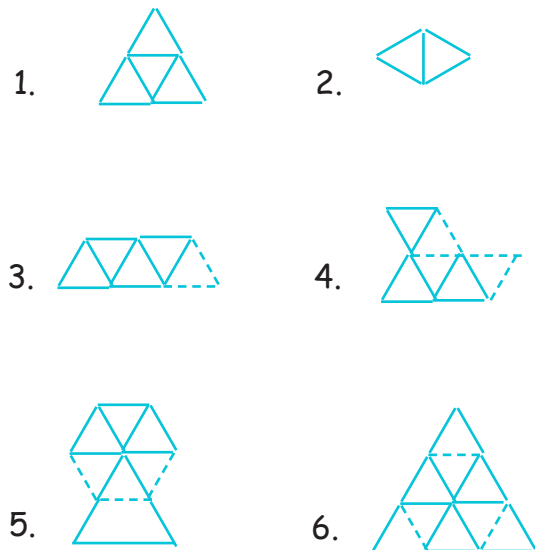


Pg. 17 Word Search



Puzzle Solution

Pg. 14 Toothpick Puzzle



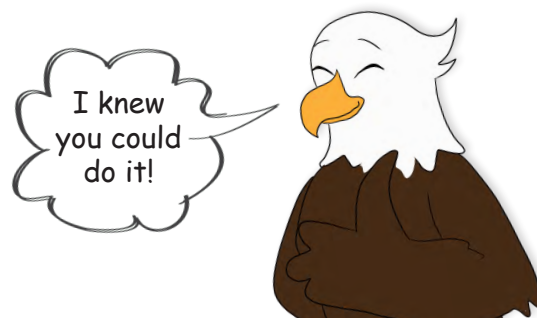
Pg. 21 Addition Fill In

				4	+	2	=	6					
					+		=		2				
3	+	5	=	8					8	+	1	=	9
	+		=							+		=	
1				9					3				
	=									=			
2	+	4	=	6					4	+	3	=	7
					+		=						
					2								
					=								
1	+	8	=	9									
	+								2	+	7	=	9
2				1						+		=	
	=								1	+	1	=	2
3	+	1	=	4						+		=	
					=								
				5	+	3	=	8					



Pg. 19 Brain Teasers 2.0

1. Tricycle 2. Big Bird 3. Slow Down
4. Sand Box 5. Green Grass



Pg. 22 Sudoku

8	6	7	5	3	4	2	1	9
1	4	9	8	6	2	3	5	7
2	3	5	9	1	7	4	8	6
6	1	4	7	8	5	9	3	2
9	5	3	2	4	1	6	7	8
7	8	2	6	9	3	1	4	5
5	7	1	4	2	9	8	6	3
4	2	8	3	7	6	5	9	1
3	9	6	1	5	8	7	2	4

Puzzle 1

8	1	9	3	4	6	7	5	2
3	6	2	1	7	5	8	9	4
5	4	7	8	2	9	1	6	3
2	7	5	4	1	8	6	3	9
1	9	6	7	5	3	2	4	8
4	8	3	9	6	2	5	1	7
7	3	1	5	8	4	9	2	6
6	5	4	2	9	7	3	8	1
9	2	8	6	3	1	4	7	5

Puzzle 2

9	2	4	6	3	5	7	8	1
7	3	5	1	4	8	9	6	2
6	8	1	7	2	9	5	3	4
8	9	3	4	5	7	1	2	6
5	7	6	2	8	1	3	4	9
4	1	2	3	9	6	8	7	5
3	4	7	5	1	2	6	9	8
2	5	9	8	6	3	4	1	7
1	6	8	9	7	4	2	5	3

Puzzle 3

