Unscramble Words

Help Vint CyBear unscramble the technology words below. Hints are provided below each scrambled word. Then circle each word inside the box. (Hint: Four words are people's names connected to the CyBear Family)

a) _____
omecturp
(electronic device)

b) _____
coed
(programming language)

c) _____
asofterw
(used by computers)

d) _____
akeybdro
(input device)

e) _____
emarfniam
(large computer)

f) _____
gturin
(first name is Alan)

g) _____
mircipcoh
(tiny electronic part)

h) _____
erhopp
(first name is Grace)

i) _____
lacelove
(first name is Ada)

j) _____
fcer
(first name is Vint)

k) _____
bnyira
(number system)

l) _____
epncryt
(hide messages)

m) _____
dpecryt
(unhide messages)

n) _____
etrenint
(global network)

o) _____
tcegyoholn
(application of knowledge)

```
E K E Y B O A R D T Y Y Y Y T
H R M J W T T X E Y T D Y G Y
A T A G D D W C N Q K T B T Z
R D K W Y M H X D Y R P P D P
D Y D R T N A T T M D Y R L L
W C L Z O F E I Y P R R P B E
A L O L L N O G N C Y I Y C R
R X O M R V N S N F H R A Q Y
E G B E P I G E K C R L C R T
Y L T C R U B B O J E A A E H
L N O U V N T R R V P N M O D
I D T C P B C E O R I W P E R
E R L E X I X L R B D P M V D
B L M R M Y W Q Y Y E Y B V M
Y D D F P Y J J L R J R D Z Y
```
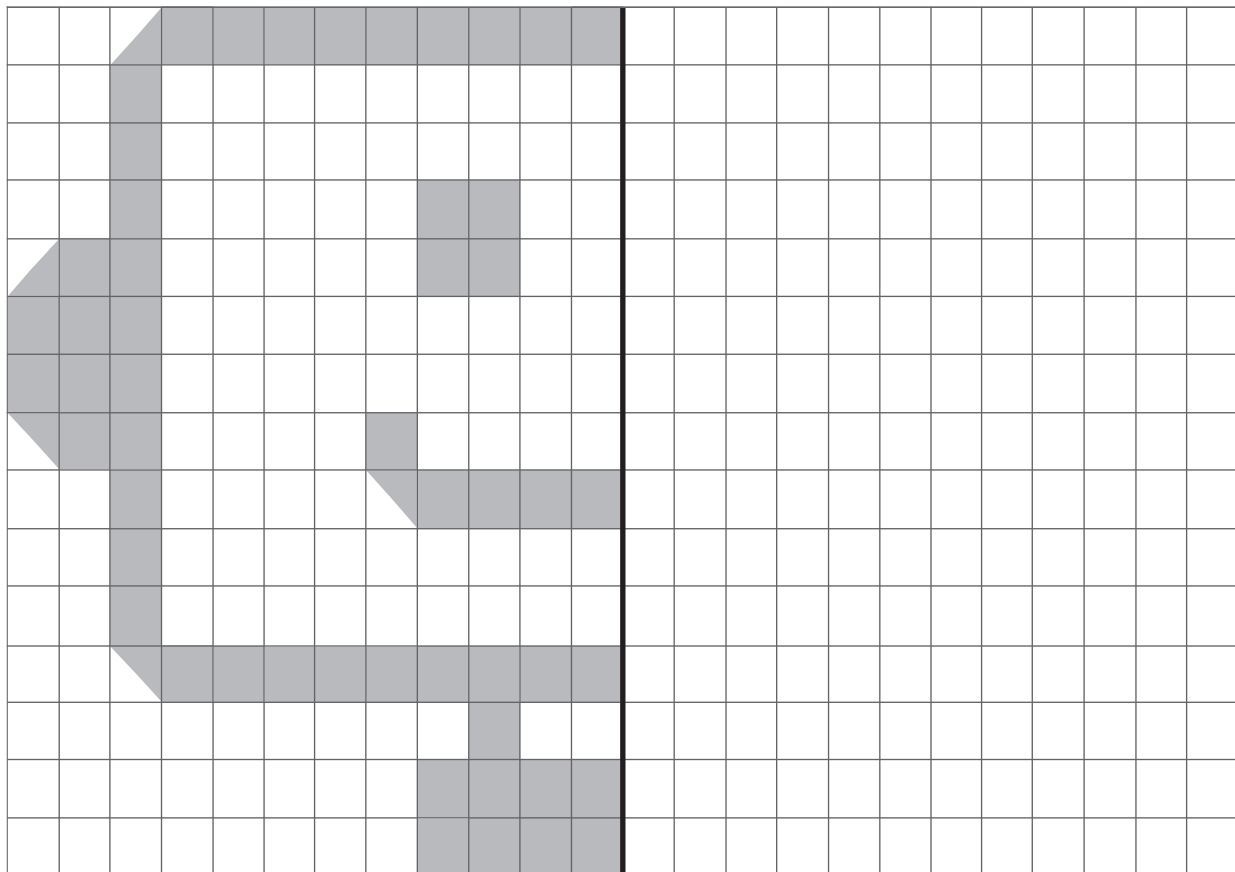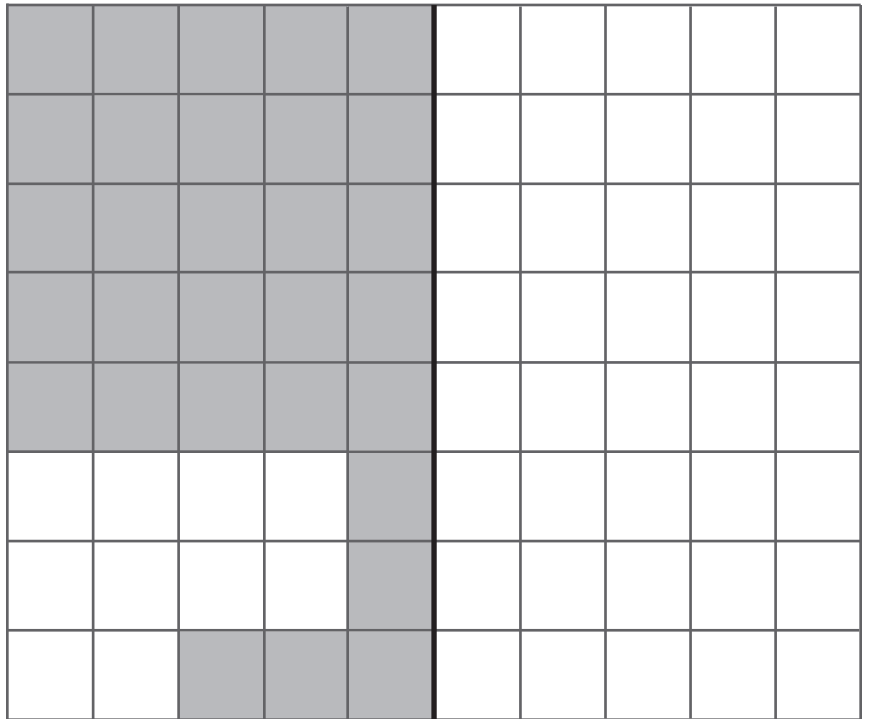
In both designs, half of the image appears to the left of a line of symmetry.

Shade the rest of each design. Keep it symmetrical.

To the right, you will finish a desktop computer. Below, you will complete a robot design.

Spelling Skills - Vowels vs Consonants

Fill in the missing vowels and consonants of each word below.

A **vowel** is a letter representing a speech sound made with the vocal tract open, specifically the letters A, E, I, O, U.

Read each definition below and then fill in the missing vowels to identify the word.

1. H __ RDWARE: The physical components of a computer system.

2. KEYB __ __ RD: An input device using an arrangement of buttons, or keys, to act as mechanical levels or electronic switches.

3. M __ NIT __ R: An electronic visual display for computers.

4. BL __ __ TOOTH: A wireless technology designed to replace cables between cell phones, laptops, and other devices.

A **consonant** is any letter *except* a, e, i, o, u.

Read each definition below and then fill in the missing consonants to identify the word.

5. B __ OWSE __: A utility program that allows the user to locate and retrieve information from networked information services.

6. CA __ __ E: A physical medium for carrying signals.

7. __ UR __ OR: A symbol on a display screen that indicates the active position.

NOW TRY THIS: Now that you have filled in the missing letters of the words above, match some of those words to the pictures shown. The first one has been done for you.
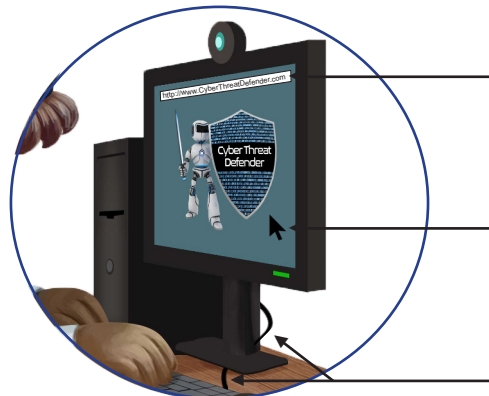
Homographs

A **homograph** is a word that is spelled the same as another word but has a different meaning. Sometimes, it is pronounced differently too!

ring	mouse	wave	subject
can	watch	pet	speaker

The following sentences feature the homograph words in the box above. Read each sentence aloud. Can you identify the different meanings?

1a. When you wear a **ring**.

1b. To **ring** a doorbell.

2a. A computer **mouse**.

2b. A **mouse** eats cheese.

3a. An ocean **wave** along the shore.

3b. You **wave** to a friend to say hello.

4a. My favorite **subject** is technology.

4b. I have nothing to say on the **subject**.

5a. I **can** write computer code.

5b. I drink soda from a **can**.

6a. You **watch** TV after school.

6b. I wear a smart **watch**.

7a. I love to **pet** my dog.

7b. My **pet** dog is very soft.

8a. We had a **speaker** at graduation.

8b. The laptop **speaker** is loud.

A. Read the following words aloud in each row. **Circle** the **three words** that rhyme with the word at the left. One word will not be circled.

1. **mouse**	blouse	house	muse	spouse
2. **can**	ban	fan	gran	bean
3. **watch**	swatch	patch	notch	botch
4. **speaker**	soaker	weaker	beaker	sleeker

B. Read each question and circle the correct answer.

1. Which one can be wireless? mouse spouse

2. Which is an Internet connect device? watch sasquatch

3. Which one has four legs? log dog

4. Which one is made of metal? can man

5. Which one connects to a computer? beaker speaker

Synonyms - Wordcross Puzzle

A **synonym** is a word that means the same or almost the same as another word.

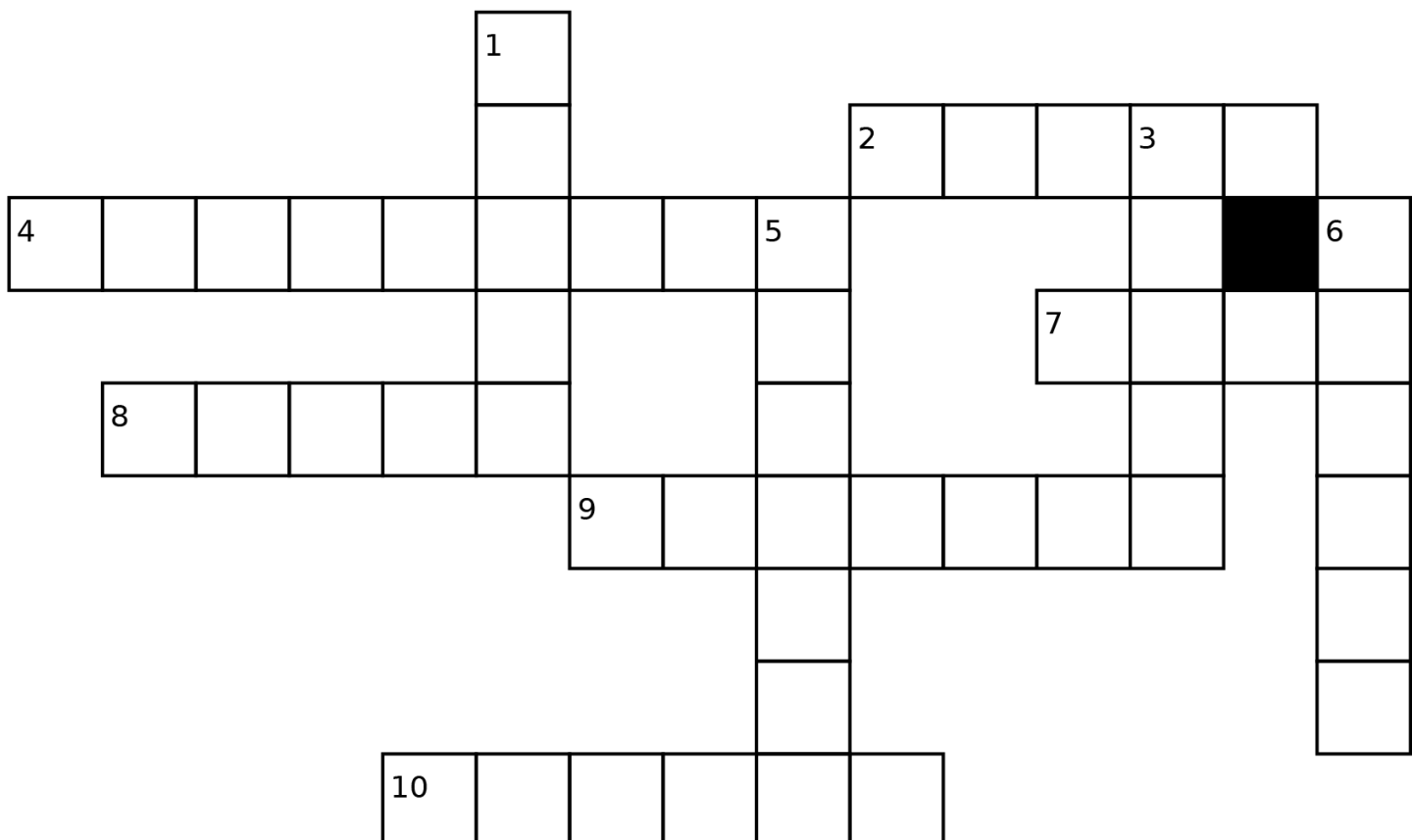|				
joins	defend	immediate	hidden	move
click	enlarge	rules	explore	close

Complete the puzzle. Find the synonym for each word with help from the answer key above.

Synonyms Down

1. connects

3. lock

5. search

6. protect

Synonyms Across

2. bang

4. urgent

7. maneuver

8. protocols

9. expand

10. clandestine

Help Your Family Stop Phishing Emails

A **homophone** is a word that sounds the same as another word but has a different spelling and different meaning. A phishing (sounds like fishing) email pretends to be from someone you trust and trys to gain personal information about you. They are "fishing" for information.

Read the phishing email below. For each pair of underlined homophones, circle the correct word.

To: Alan and Grace CyBear

From: Your Neighborhood Supermarket

Subject: Congratulations! You <u>Won/One</u>!
                                              1

Greetings, Mr. and Mrs. CyBear!

         Thank you for ordering your weekly groceries online from the Neighborhood

Supermarket. It is customers like <u>you/ewe</u> that help us support schools and robotic
                                                      2

clubs each <u>week/weak</u>. As a loyal customer, <u>we/wee</u> would like <u>to/too</u> inform you that
                         3   4   5

you have <u>bin/been</u> entered into our weekly sweepstakes for free groceries. We are
                    6

excited to share you won this weeks drawing for $500 in free groceries!

         To verify your information, please reply by email to confirm you have received

this message and <u>weather/whether</u> or not we can share your name in the weekly
                                  7

newlsetter. Make <u>sure/shore</u> to include the password you use to make your grocery
                            8

orders online to confirm your identity. We will <u>mail/male</u> you the prize money soon!
                                                                   9

         Sincerely,

         <u>Yore/Your</u> Neighborhood Supermarket
   10

About Pigpen Ciphers

A **pigpen cipher** is a type of **subsititution cipher**. This means that instead of using letters in the alphabet, letters are subsituted, or replaced, by geometric symbols. To encrypt a message, replace each letter in the message with its designated symbol.

Use the key below to solve the phrase on following pages. An example is found at the bottom of the page.
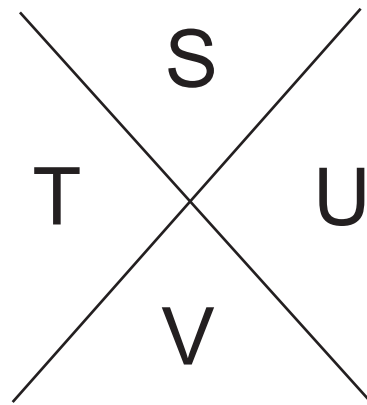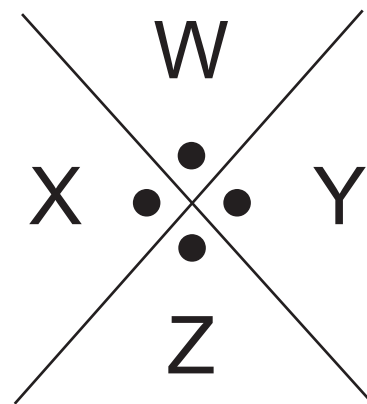
As an example, the phrase "**Writing in code is called a cipher**" becomes:

Decoding with a Pigpen Cipher

Use the pigpen codes from page 13 to decode the following quotes from prominent members of the computer science community!

Hint: To decode a message, locate the shape on the diagram to find the letter. Whether there is a dot in the shape will guide you to which grid you should be looking at.

1. >⊓☐ ⊐⊑⌐☐ ⌐ ⌵><<⊐< >⊓☐ ⊐⊑⌐☐ ⌐⊙⌵⌟>⌐⊐⊔⊔⊑☐ ⊐⊑ ⌐ ⊏☐☐⊔ ⊐< ⊓ ☐☐⌐<⌵ ⊑⊑⌐ ⌐> >⊑ ⊔☐

   ~ Agusta Ada King

2. ⌵☐ ☐☐⌵∧☐⌐ ☐∧☐⌐ ⌐☐ >⊓☐ ⊓⌐⌵>⊑⌐< ☐☐ ⊐⌟☐⊔⌐⊐⌟ ⊓⌵∧☐ ⊓⌟⊐ ⌟⊏ ⊔☐⌵⌵ >☐ ⌵☐ ⊐<⊏⊓ ⌐☐⊏⊑⌐⊐⌟>⌐☐☐ ⌵☐ ⊓<⌐⊏⊔⊔<⌵ ⌟☐⊐ ⌵☐ ☐⌟⌵⌐ ⊔<

   ~ Vint Cerf

3. ⌟ ⊔☐☐> ☐☐ ⊔⌐⊐⌵ ⌟⌐☐⌵⌐☐⌟ <⊓ >☐⊐⌟< ⌟⌐☐☐> >☐⊔⌐ >⊓⌟> <☐< ⊔⌟☐ ⊔☐ ⌵⊓⌟>☐∧☐⌐ <☐< ⌵⌟☐> >☐ ⊔☐ >⊓☐⌐☐ ⊐⌟< ⊔☐ ☐⊔⌵>⌟⊔⊔ ☐⌵ ⊔<> >⊓☐⌐☐ ⌟⌐☐ ☐☐ ⊔⌐⊐⌐>⌵

   ~ Mark Dean

4. >⊓☐ ⊐⊑⌐☐ ⌐ ⌵><<⊐< >⊓☐ ⊐⊑⌐☐ ⌐⊙⌵⌟>⌐⊐⊔⊔⊑☐ ⊐⊑ ⌐ ⊏☐☐⊔ ⊐< ⊓ ☐☐⌐<⌵ ⊑⊑⌐ ⌐> >⊑ ⊔☐

   ~ Rear Admiral Grace Hopper

Cryptography - Letter Grouping

Writing in 4-letter groups or 5-letter groups is a quick way to encode a message. To begin, write a sentence in *all capital letters* and *without* punctuation. Squeeze all the letters together.

For example,the sentence **TO BE OR NOT TO BE THAT IS THE QUESTION** becomes **TOBEORNOTTOBETHATISTHEQUESTION**.

Now that the sentence has been squeezed together, divide it evenly into 5-letter groups: **TOBEO RNOTT OBETH ATIST HEQUE STION**

Finally, if a sentence does not divide evenly, fill in the empty spaces with "**null**" letters that do not fit with the sentence.

For example, the sentence SECRET CODES ARE EASY becomes **SECRETCODESAREEASY**, which can be encoded into 5-letter groups to **SECRE TCODE SAREA SYQWX**. The sentence is completed as a coded message by adding the "null" letters QWX at the end.

Now you try! Below is a coded message. Write out the complete message in capital letters, with no spaces between them. Mark a slash (/) between words as they appear to you. We'll start it for you.

CYBER ATTAC KSCAN HARMY OURCO MPUTE RIFYO URCOM
PUTER SFIRE WALLS OFTWA REISN OTUPD ATEDQ

<u>C Y B E R / A T _ _ _ _ _ _ _ _ _ _ _</u>

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Bonus Question: How many "null" letters were at the end of the sentence?

Let's practice decoding secret messages!

Key: 5-Letter Groups

Coded Message:

THEIL OVEYO UVIRU SISAM ALWAR ECYBE RATTAC KSENT
INANE MAILT HATCA NHARM YOURC OMPUT ERQWY

—————————————————————————————————

—————————————————————————————————

—————————————————————————————————

—————————————————————————————————

Write the message in plain English:

Key: 4-Letter Groups

ANTI MALW AREI SSOF TWAR ETHA THEL PSPR OTEC
TYOU RCOM PUTE RFRO MMAL WARE CYBE RATT ACKS

—————————————————————————————————

—————————————————————————————————

—————————————————————————————————

—————————————————————————————————

Write the message in plain English:

Cryptography - Reverse Cipher

A really quick, simple way to encode, or hide, a message is with a reverse cipher. It is the simple process of reading a word or sentence backwards!

For example, the word **HELLO** becomes **OLLEH**.

To make an encoded message hard to read, make sure to write it in all capital letters and remove all punctuation marks. Then, squeeze all the words in a message together by removing the spaces between words.

For example, CREATING SECRET MESSAGES becomes:
SEGASSEMTERCESGNITAERC. You can also add "null" letters at the end of a message to make it more confusing!

Practice encoding the following message. Remember to remove spaces between words. We'll get it started for you.

YOU MUST BE CLEVER TO UNDERSTAND THIS MESSAGE

E G A S _____

_____

Now, practice decoding, or uncovering, the following message. Add a slash (/) between words to help read the message. We'll get it started for you. (Hint: The Q at the end is a null letter)

HSILGNENIALPOTNISEGASSEMDEDOCGNIGNAHCFOSSECORP
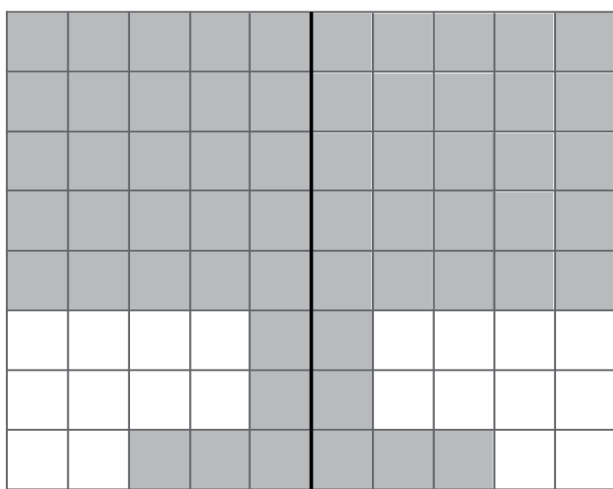EHTSIGNIDOCEDQ

D E C O D I N G / I _____
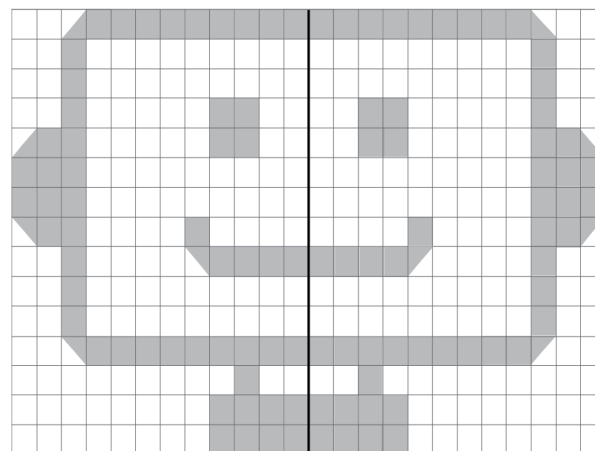
_____

CyBear Activity Sheets - Answers

PAGE 1
a) computer
b) code
c) software
d) keyboard
e) mainframe
f) turing
g) microchip
h) hopper
i) lovelace
j) cerf
k) binary
l) encrypt
m) decrypt
n) internet
o) technology

PAGE 2

PAGE 2 *(continued)*

PAGE 3
1. HARDWARE
2. KEYBOARD
3. MONITOR
4. BLUETOOTH
5. BROWSER
6. CABLE
7. CURSOR
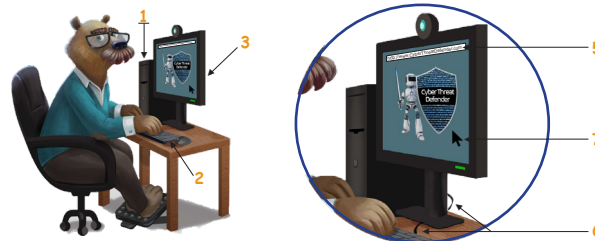
PAGE 4
A. 1. blouse, house, spouse; 2. ban, fan, gran; 3. swatch, notch, botch; 4. weaker, beaker, sleeker
B. 1. mouse; 2. watch; 3. dog; 4. can; 5. speaker

PAGE 5
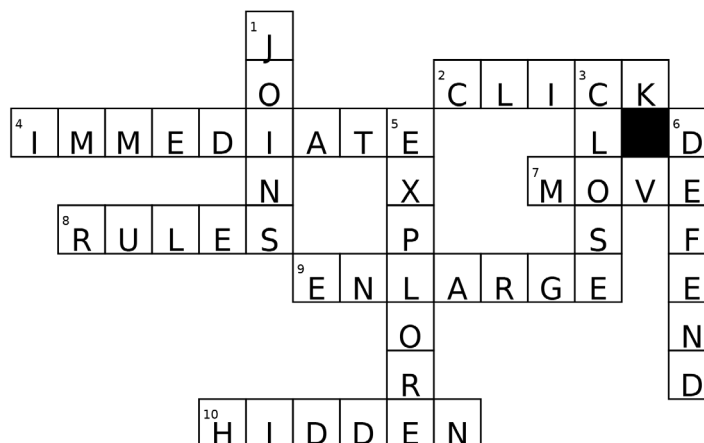
PAGE 6

1. Won
2. you
3. week
4. we
5. to
6. been
7. whether
8. sure
9. mail
10. Your

PAGE 8

1. The more I study, the more insatiable do I feel my genius for it to be. ~Agusta Ada King
2. We never, ever in the history of mankind have had access to so much information so quickly and so easily. ~Vint Cerf
3. A lot of kids growing up today aren't told that you can be whatever you want to be. There may be obstacles, but there are no limits. ~Mark Dean
4. One day ladies will take their computers for walks in the park and tell each other, "My little computer said such a funny thing this morning." ~ Rear Admiral Grace Hopper

PAGE 9

Cyber attacks can harm your computer if your computers firewall software is not updated

Bonus Question: One (1). The letter 'Q' is a null letter.

PAGE 10

5-Letter Group Message: The I Love You Virus is a Malware Cyber Attack sent in an email that can harm your computer

4-Letter Group Message: Anti Malware is software that helps protect your computer from malware cyber attacks

PAGE 11

Encoded Message: EGASSEMSIHT DNATSREDNUOTREVELCEBTSUMUOY

Decoded Message: DECODING IS THE PROCESS OF CHANGING CODED MESSAGES INTO PLAIN ENGLISH

Join the Fun & #DefendYourNetwork Today!

CIAS

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