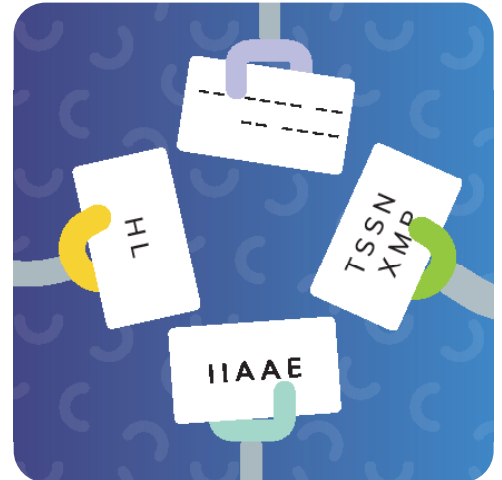


Seeing the Whole Picture: Coded Messages

Working as a Team

Robots have lots of sensors that work together to help the robot understand everything around it. The light sensor is really good at telling the robot if the room is bright or dark; the sound sensor can tell the robot when there are loud or quiet sounds. Because the light sensor can only see light and the sound sensor can only hear sound, both sensors need to talk to and listen to each other to help the robot understand the whole picture.

Just like sensors, our friends can often see, hear, feel or understand things that we cannot. It's important to listen to others' points of view. When we listen to others, we see new things that we couldn't see before, and it helps us understand the whole picture.



Challenge

It's your team's job to de-code a series of messages. The catch? You each only have a piece of the solution. Without looking at your teammates' sensor data card, work as a team to decode each message.

Players (2-4)

- Player 1 can only see the secret code's vowels.
- Player 2 can only see the secret code's consonants from B-L.
- Player 3 can only see the secret code's consonants from M-Z.
- Player 4 can only see the secret code's blank spaces.
- **Note:** The code letters are written in the left-to-right order that they appear in the secret message — **They do not need to be “un-scrambled.”**

Example

- Player 1 sees: I I A A E
- Player 2 sees : H L
- Player 3 sees: T S S N X M P
- Player 4 sees: _ _ _ _ _
- Solution: “THIS IS AN EXAMPLE”

Teacher Prep

- Separate students into groups of 2-4.
- Print the Teacher Answer Key (for your eyes only!)
- Prepare the Challenge Cards:
 - Print enough copies of the Challenge Cards (attached) so that you have at LEAST five (5) sets per group. Keep additional sets on-hand in case some groups finish early.
 - Cut out each group's cards, taking care to separate them into piles for the separate players. For example, Group A should have:
 - 1 pile for Player 1 (Vowels),
 - 1 pile for Player 2 (Consonants from B-L),
 - 1 pile for Player 3 (Consonants from M-Z),
 - and 1 pile for Player 4 (Blank Spaces).
- Print the Student Answer Sheets (1 per group)

With the Class

- 1) Discuss the "Working as a Team" section with students. Make deliberate connections between a robot's sensors receiving different data and our classmates having different perspectives and backgrounds.
- 2) Explain the "Challenge" section to students. If helpful, review the example together as a class.
- 3) Distribute each group's Challenge Cards and Student Answer Sheets. Then, let the games begin!

Extension

Looking for more? Once groups have finished de-coding all of their secret messages, they can work together to create their own DIY Challenge Cards. We've attached a DIY Challenge Card template and a DIY Student Answer Sheet to help!

If there is time left in class, encourage groups to exchange their DIY Challenge Cards to keep the competition going. Otherwise, collect students' custom cards and prepare them for the next time you play as a class!

Subject(s):

Coding
Robotics
Social-Emotional Learning
Language Arts

Experience Level:

Beginner
Intermediate

Time:

30-60 mins

Group Size:

2-4

Fun for the Year!

Looking for a way to keep students de-coding throughout the school year?

Invite students to each create a DIY Challenge Card Set every week, or use it as a permanent quiet-time activity.

Make sure to collect the DIY Challenge Card sets somewhere so that they don't get lost!

When you have another opportunity to play Seeing the Whole Picture again, you'll have a whole new set of project codes to try out!



Education

Getting Started: Teacher Answer Key

On the following pages, there is a blank card template to create your own messages, as well as a series of cards with pre-made coded messages.

Here are the decoded messages for the pre-made cards:

Message #	Decoded Message
1	ROBOTS ARE SO COOL!
2	BE CURIOUS
3	LET'S WORK TOGETHER.
4	COMMUNICATION IS IMPORTANT!
5	HELLO EVERYONE!
6	TRY NEW THINGS
7	SHARING IS KIND!
8	EXPRESS YOURSELF
9	REMEMBER TO LISTEN
10	WHAT DID YOU LEARN?
11	SHARE
12	CURIOUS
13	OPPORTUNITY
14	COMPUTER SCIENCE
15	COMMUNICATION

Name: _____

Date: _____

Seeing the Whole Picture: Student Answer Sheet

As you decipher the coded messages, write each one down in this chart next to the message number that is on the bottom right of the cards.

Message #	Decoded Message
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

O O A E O O O

Message # 1

Consonants B-L

B C L

Message # 1

Consonants M-Z

R T S R S

Message # 1

Blank Spaces

— — — — —

— — — — — !

Message # 1

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

EUIOU

Message # 2

Consonants B-L

BC

Message # 2

Consonants M-Z

RS

Message # 2

Blank Spaces

--

Message # 2

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

E O O E E

Message # 3

Consonants

B-L

L K G H

Message # 3

Consonants

M-Z

TSWRT

Message # 3

Blank Spaces

Message # 3

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

ONIAI
OIIOA

Message # 4

Consonants B-L

CC

Message # 4

Consonants M-Z

MMNTNS
MPRTNT

Message # 4

Blank Spaces

-----!

Message # 4

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

E O E E O E

Message # 5

Consonants B–L

H L L

Message # 5

Consonants M–Z

V R Y N

Message # 5

Blank Spaces

— — — — —
— — — — — !

Message # 5

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

E I

Message # 6

Consonants B–L

H G

Message # 6

Consonants M–Z

TRY N
WTNS

Message # 6

Blank Spaces

— — — — —
— — — — —

Message # 6

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

A I I I

Message # 7

Consonants B-L

H G K D

Message # 7

Consonants M-Z

S R N N

Message # 7

Blank Spaces

_____!

Message # 7

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

EEOUE

Message # 8

Consonants B-L

LF

Message # 8

Consonants M-Z

XPRSSYRS

Message # 8

Blank Spaces

Message # 8

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

EEEE O I E

Message # 9

Consonants B-L

B L

Message # 9

Consonants M-Z

R M M R
T S T N

Message # 9

Blank Spaces

— — — — —
— — — — —

Message # 9

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

AIOUEA

Message # 10

Consonants B-L

HDDL

Message # 10

Consonants M-Z

WTYRN

Message # 10

Blank Spaces

_____ ?

Message # 10

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

A E

Message # 11

Consonants B–L

H

Message # 11

Consonants M–Z

S R

Message # 11

Blank Spaces

— — — — —

Message # 11

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

UIOVS

Message # 12

Consonants B–L

C

Message # 12

Consonants M–Z

RS

Message # 12

Blank Spaces

— — — — —

Message # 12

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

OOUI

Message # 13

Consonants B–L

[none]

Message # 13

Consonants M–Z

PPRTNTY

Message # 13

Blank Spaces

— — — — —

Message # 13

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

O U E I E E

Message # 14

Consonants B–L

C C C

Message # 14

Consonants M–Z

M P T R S N

Message # 14

Blank Spaces

— — — — —
— — — — —

Message # 14

Challenge Cards

These cards feature some words and phrases to get started—but don't limit yourself just these! Use the pattern and create your own coded messages.



Vowels

O U A I O N

Message # 15

Consonants B–L

C C

Message # 15

Consonants M–Z

M M N T N

Message # 15

Blank Spaces

— — — — —

Message # 15

DIY Card Template

Use this template to make cards for the four parts of each coded message. The “message number” field is to help keep the cards together. Assign each set of message cards a unique, arbitrary number so that if the cards get shuffled together, you can sort them apart easily.



Vowels

Message # _____

**Consonants
B–L**

Message # _____

**Consonants
M–Z**

Message # _____

Blank Spaces

Message # _____

Name: _____

Date: _____

Seeing the Whole Picture: Student Answer Sheet (DIY Cards)

As you decipher the coded messages, write each one down in this chart next to the message number that is on the bottom right of the cards.

Message #	Decoded Message