Everyone Feels Curriculum

A Curriculum Unit teaching Social and Emotional Learning through Robotics

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Introduction to the Curriculum

This curriculum entitled "Everyone Feels" uses robotics as a tool for developing emotional competency in kindergarten students. To achieve this, it takes a peace education approach, specifically focusing on social-emotional learning competencies. This curriculum is intended for kindergarten students who have been previously exposed to robotics in the past using the KIWI robotics construction kit. Students will work independently and in large group settings to create a robot that expresses their feelings, after reading and discussing "The Feelings Book" by Todd Parr. This curriculum is inspired by Professor Marina Bers and her DevTech Research Group at Tufts University in the Eliot-Pearson Department of Child Development.

What is Social-Emotional Learning?

Social-emotional learning (SEL) is an umbrella term that falls over the following five core competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making ("SEL Core Competencies"). SEL teaches students how to manage their emotions, care about others, evaluate decisions, behave positively and responsibility, and develop positive relationships with others ("SEL Core Competencies"). SEL can be taught both formally and informally in schools, using evidence-based curriculums or incorporating individual practices into an existing curriculum. SEL does not develop in isolation. Instead, it "develops across contexts" (Jones and Bouffard, 2012, pg. 8). Therefore, this curriculum uses hands-on robotics lessons to teach emotional competency in order to create continuous SEL learning in the classroom.

This curriculum, while focusing primarily on emotional competency, touches on the five core competencies within SEL. The lessons in this curriculum help students become aware of their own feelings and understand others' feelings. In doing so, it addresses the concepts of self-awareness and social awareness. In being able to recognize their own feelings, and by learning strategies to deal with these feelings, students are gaining skills in self-management and responsible decision-making. Additionally,

this curriculum will help children to better express their feelings, thus providing others with a clearer, more nuanced perspective of the situation as seen through the child's lens (Cohen, 2006; p. 202, 208, 216; Hoffman, 2009, p. 535). When students can communicate their feelings with others, they are learning important relationship skills.

Emotional Competence- Why Kindergarten?

Kindergarten is a crucial time for student learning, particularly in terms of social-emotional learning. In this curriculum, students will gain emotional competence through a combined approach of peace education and robotics, by focusing on social-emotional learning. Familiarization and practice with the five core competencies of social-emotional learning are important in reaching this goal for students. According to Immordino-Yang and Damasion (2007), neurobiological evidence suggests that attention, memory, learning, and decision making, among other important cognitive processes, are affected by, and working in conjunction with our emotions. Additionally, emotional competence may play a vital role in a child's ability to apply knowledge learned in the classroom to outside contexts. Finally, in order for students to acquire and use decision-making and reasoning skills, they must be in touch with their own emotions. Therefore, it is important to start integrating social-emotional learning into the curriculum from the beginning. In doing so, students will gain important emotional competency that will have immense impacts on their abilities and experiences both inside and outside of school. In gaining emotional competency, students have the ability to take what they have learned and apply it in their relationships with others, their future jobs, and beyond.

Fostering emotional competencies and other peace education concepts into classroom learning from an early age is critical. Therefore, this curriculum targets some of the youngest learners in our schools: kindergarteners. According to Harris and Morrison (2013), "there is solid evidence that teaching younger children conflict resolution and mediation skills can lead to a reduction in acts of physical aggression at schools and increase in problem-solving and critical thinking skills" (p.220). By reducing propensity to violence from an early age, SEL proves to be an important ingredient of peace education.

Giving everyone in the classroom, including teachers, the ability to be heard, can ultimately decrease stress. As a result, less stress can lead to fewer conflicts, inside and outside of the school environment.

Peace education aims to provide people with the tools to understand and discuss conflict, as well as find peaceful resolutions to violent situations. Peace education advocates for understanding opposing viewpoints, as there is evidence that by acknowledging an opposing perspective as valid, tension may decrease in a heated situation, or prevent such a situation altogether. Additionally, peace education aims to provide a safe place for expressing thoughts and ideas while simultaneously eradicating various levels of violence, from the individual through the societal level (Bajaj, 2008, p. 21). By focusing on emotional competence through SEL concepts, students are experiencing peace education. This curriculum uses peace education concepts throughout, from conflict resolution to cultural competency. In addition to broad concepts, this curriculum also uses peace education classroom tools, such as a peace circle, for discussion. By gaining emotional competence, students are gaining the building blocks for cultural competence.

Cultural Capital

In her seminal article, Tara Yosso asks, "whose culture has capital?" (2005). Cultural capital is the cultural knowledge, skills, and abilities that are valued by dominant society. By shifting our view of what is valued, we can see that there are many different ways which to attribute value, and that communities of color carry with them immense cultural wealth that is often overlooked. According to Yosso, there are six types of community cultural wealth: aspirational, familial, social, linguistic, resistant, and navigational (pg. 78). Educators should be aware of these different types of wealth that society might not recognize as valuable, and maximize upon them. By using a curriculum such as this one, teachers are able to target different types of learners, who carry with them different but valuable forms of cultural wealth. Through robotics activities that take peace education approach, teachers can place value on sharing this wealth. In Lesson Extensions (see Appendix A), there is an activity that asks students to interview someone from home about their culture and background, and then decorate a robot inspired

by that person. In this activity, students are able to capitalize on familial capital and linguistic capital by sharing the traditions, beliefs, and languages of their family.

Positive Technological Development- Why Robotics?

Professor Marina Bers from Tufts University has developed a theoretical foundation called Positive Technological Development (PTD), which she describes as a way to "bring forward the need for youth to develop character traits that will help them use technology safely to communicate and connect with other people and to envision the possibility of making a better world" (2012, p. 9). She proposes six positive behaviors (six C's), which she describes in-depth in her book entitled "Designing Digital Experiences for Positive Youth Development: From Playpens to Playground" (2012):

1. *Competence:* the ability to use technology to design projects that accomplish a goal, and to debug projects and problem solve

2. *Confidence:* "a sense of oneself" as a person who learns to feel successful when using technology, who asks for help when necessary, and who continues to work when faced with technological difficulties

3. *Character:* "a moral compass" that help students use technology in responsible and safe ways, as well as using technology to express one's values

4. *Caring*: empathy for other students' needs and concerns; the ability to use technology as a way to help others

5. *Connection:* creating and continuing relationships through the use of technology

6. *Contribution:* using technology to solve community/social problems and give back to society

The first three C's focus on intrapersonal skills within children, while the last three C's focus on interpersonal skills between children. Overall, the goal of PTD is to use technology as a way to support children in their own development and in making changes in the world.

Additionally, Bers (2012) acknowledges the importance of the surroundings in which children develop. She proposes that technology is "mediated by the context provided by the culture, rituals,

and values of the environment. The use of technology to achieve certain goals, to ac in the world, to make things, doesn't happen in a vacuum but, rather, within the particular sociocultural and micro- and macrocultural context" (p. 18). Thus Bers, in her theoretical framework, addresses the important role that culture plays in robotics.

Using the PTD framework as a foundation, Bers and her research team at Tufts University have been developing various robotics curricula to be used in early education. They have also developed the KIWI robotics construction kit, which will be used for the robotics portion of this curriculum. Children can easily assemble and program their KIWI robots without teacher assistance. The KIWI robots use a tangible programming language; students physically construct programs for their robots by connecting interlocking wooden blocks. Each block has a barcode, and each robot has a built-in barcode scanner that reads each block and then temporarily stores the program on the robot.

Integrating SEL with Robotics

The *Everyone Feels* curriculum was inspired by the PTD framework of Bers (2012) and the ED 164: Education for Peace and Justice readings and class discussions together. We believe that PTD complements the goals of peace education and SEL. In particular, we see resemblance between the 6 C's (competence, confidence, character, caring, connection, and contribution) and the five competencies of SEL (self-awareness, self-management, relationship skills, and responsible decision making). Both frameworks aim to help children understand and define their senses of identity and acknowledge the importance of interacting with others and society. Additionally, peace education, SEL, and PTD address the importance of cultural context and understanding one's values and background.

Certain activities in this curriculum were borrowed from already-existing curricula created by DevTech because we believe that they capture the essence of SEL. We have taught some of these activities previously and have seen how they foster relationships, built self-awareness and confidence in students, and create a positive classroom environment. For example, collaboration webs are used in each of the lessons. Each student receives a web with his or her photograph in the center of the page and the photographs and names of all other children in the class arranged in a circle surrounding that

central photo (see Appendix F). During the activities, each child draws a line from his or her own photo to the photos of the children with whom he or she has given help to or received help from. Additionally, this curriculum borrowed the idea of having a Parent's Night, which occurs after the completion of the curriculum. Parents are invited to see what their children and their children's classmates have been working on. This creates an opportunity for teachers, parents, and students to connect with one another and to bridge the gap between the home and school environments.

Curriculum Integration and Extension

The "Everyone Feels" curriculum integrates foundational concepts of social and emotional learning and emotional competency with programming and robotics. While the curriculum includes activities that focus specifically on the theme of emotional competency, this curriculum can be modified in a number of ways to touch upon the other four competencies of SEL as well as peace education concepts (see Appendix A).

In addition, this curriculum can be tailored to cover state standards in all subject areas, including mathematics, language arts, social studies, and science. Already, this curriculum has a strong connection to language arts because it uses the "The Feeling Book" by Todd Parr to begin and facilitate conversations about emotions. In lesson 3, students have the opportunity to practice writing by making invitations for their parents to come to Parent's Night. Additionally, mathematics is inherently built into the curriculum because students calculate the distance they want their robot to travel. When using the "repeat" block, children must know the number names and then figure out which number will make their robot move the intended distance. In addition to these already existing connections, teachers are encouraged to add extensions to cover additional standards. For example, teachers may want to add a short science component that explains the biology behind emotions.

As can be seen, this curriculum was designed with state standards in mind because we understand that teachers are feeling increased pressure from policymakers and school administrators for students to do well on standardize tests.

The Curriculum

Lesson 1
What Are Feelings?

Overview:

Children learn about feelings by listening to their teacher read a book entitled "The Feeling Book" by Todd Parr. This book will serve as a basis for the remaining lessons and the robotics aspect of this curriculum. The students will then discuss the many different feelings that we all have. In doing so, students will being to gain emotional competency.

Prior Knowledge	Objectives	
	Students will understand that…	*Students will be able to…*
• None, but prior experience with listening to books being read aloud and having discussions is helpful	• There are many different **emotions** • Different **situations** cause us to feel in different ways • Everyone has **feelings**	• Recognize a variety of feelings

Materials / resources:

- "The Feelings Book" by Todd Parr
- Feelings Journal (see Appendix B)
- Feelings Poster (see Appendix C)

Activity description

Warm- up : Group Activity

Students will work as a group to brainstorm a list of classroom guidelines and rules for creating a safe space in the classroom. These rules should be generated by class discussion, and can be posted on the wall for later reference.

Introduce the concepts and the task: "Today we will be learning about all kinds of feelings. We are going to talk about what makes us feel certain ways, and how we can resolve any bad feelings." Discuss what feelings are.

What is a feeling?
Feelings are our overall emotional well-being. Examples are happy, sad, frustrated, mad, excited, etc.

Jump for Feelings
In this activity, the teacher will present students with a number of scenarios, asking students to think about how that situation would make them feel. Students will jump if they agree with the teacher's statement.

("Everyone in the class has feelings. We are going to hear about different situations, and how they make us feel.")

Ex 1: I feel happy when I get a present.

Ex.2: I feel excited when my friend pushes me on the playground.

Ex. 3: I feel sad when my friend pushes me on the playground.

Jump if you think the statement is true, stay seated if you don't think so. Why or why not? Discuss.)

Lesson 1 Vocabulary
Students should become familiar with the following words:

Feelings- *our overall emotional state*
Situation- *people, places, and events that make up a moment in time*
Happy- *feeling glad*
Sad- *feeling bad*
Mad- *feeling upset*
Excited-*feelings of anticipation for something to happen*

Group Work : The teacher will read "The Feelings Book" to the class.

Peace Circle: After finishing the story, students will discuss the book and how it relates to their class. Example discussion questions:

a. Describe a time that you felt like one of the characters in the book. Why?
b. What makes you feel happy? What makes you feel sad?
c. What do you do to feel better if you are feeling down?
d. What are feelings? Name some feelings.
e. How do feelings affect other people around you?
f. How can you tell how someone else is feeling?
g. Does everyone have feelings?

Peace Education Connection:
Conflict resolution is an important peace education concept. Students will reflect on a conflict that they experienced, how it made them feel, and how it was, or could be, solved. In a group, the teacher will explain "uh-oh" moments, or moments of conflict (Bruton, 2013). Brainstorm and discuss examples from books you have read or real-life classroom examples of "uh-oh" moments. Finally, discuss strategies that students can use to resolve "uh-oh" moments. Examples include: recognizing you are in an "uh-oh" moment, taking a deep breath, stopping to think before acting, and recognizing and vocalizing how you are feeling in that moment. Use the concept of an uh-oh escalator to lead students through the process from uh-oh to resolution. This involves identifying the conflict that heightened the situation, how it made you feel, what

you did to resolve the situation, and how you felt afterward. Have students work independently to fill out the uh-oh escalator worksheet in the Feelings Journal (Appendix B).

Pair Work: Talk with a partner about if you ever felt like one of the characters in the book.

Feelings Check-in: Using the Feelings Poster, students will check-in with their own emotions by drawing how they are feeling each day.

Collaboration Web: As children progress through the lesson, they will complete their collaboration webs. They will draw lines from their picture to the pictures of any classmates who give them help. If children say they didn't receive any help, remind them to think of if they talked with a friend or got any ideas by looking at another classmate's project.

Free-play: Provide opportunities for children to build freely with the KIWI robot and re-familiarize themselves with the technology, which will be used in the next lesson.

Lesson 2
Robotics Review and Project Introduction

Overview:
Children will review robotics concepts and practice using the KIWI robotics kit. Then, students will engage in discussion and reflection on their own feelings in preparation for their final project.

Prior Knowledge	Objectives	
	Students will understand that…	*Students will be able to…*
• A program is a sequence of instructions that is followed by a robot • The order of the blocks dictates the order in which the robot executes the instructions • Some ability to write, but not required (the teacher can help with this)	• The robotic 'brain' has the programmed instructions that make the robot perform its behaviors. • Robots can act out human actions	• Share their feelings with other classmates • Express and draw their own feelings

Materials / resources:
- "The Feelings Book" by Todd Parr (as a reference)
- One KIWI robotics kit for each student (1 robot, 25 programming blocks, 4 sensors)
- Feelings Journal (see Appendix B)
- Markers, Pencils, Pens, etc.

Activity description

Warm-up: Group Activity

The teacher will facilitate a short discussion about strategies for students to use when they are feeling frustrated. Sometimes, the KIWI robots do not work how students expected them to because of technical issues or incorrect programming instructions from the students. It is important to remind students of strategies they can use when they can use when feeling discouraged such as talking with a friend, asking the teacher, and taking seven deep breaths.

<u>*Introduce the concepts and the task:*</u> *"Today we will be reviewing how to use the KIWI robot and talking more about our feelings. At the end of the activity, we will get to write and draw about a time when we were feeling a certain way. Later, we will get to program our robots to act out our emotions."*

Have you ever felt?

Children will be shown or told about 10 different emotion words, such as those introduced in Lesson 1 (happy, sad, mad, excited, etc.). They jump up and down if they have ever felt that way. After each picture, have one or two students share when and why they have felt that way.

Peace Circle: As a class, children will discuss what they have learned in the past about the KIWI robot and programming. The teacher will show an already-assembled robot and review the different parts of the robot, as well as what each programming block does. It is important to emphasize the following during the discussion:

> a. A program is another word for instructions that we give to robots. We tell the robot what to do by putting the programming blocks in an order that we come up with. Therefore, the order of the blocks is very important.
> b. Each program must start with a "begin" block and finish with an "end" block. If one or both of these blocks are not there, the robot will not be able to do its program.
> c. A robot can react to the environment when we use the different sensors. The robot can listen for a clap (using the sound sensor), figure out how close or far it is from another object (using distance sensor), and know if it is dark or light (using the light sensor). Additionally, the robot can light up with the light actuator (which is like a flashlight for the robot).
> d. The "repeat" and "end repeat" blocks can be used if we want to make our robot do an instruction more than once. It is important to remember that the program will not work if one of these blocks is missing.

Peace Education Connection:
Harris and Morrison (2013) argue that it is important to begin peace education at a young age, but they argue it is even more important to create peace education curricula that are developmentally-appropriate for students at every grade level. In kindergarten, children are at a developmental stage where they imitate others and internalize others' characteristics. Therefore, Harris and Morrison suggest that teachers should be a positive role model and make peaceful choices to model how students should act. Additionally, they suggest that teachers should encourage "the manipulation of concrete materials" in order to "help children express ideas and seek solutions for their concerns" (p. 192).
While teaching this lesson, it would be helpful for teachers to model their own "I feel ____ when I ____" statement in both writing and with the KIWI robot so students have a positive example of how to express emotions. In addition, teachers should continuously encourage students to use their "concrete materials" (the programming blocks) to test out many programs for their robot. This will show students that there are multiple ways to express their emotions through robotics, as well as the idea that it is ok if it takes many tries to find a solution.

Program the Teacher: Children will work as a class to put programming blocks together to "program" their teacher to move from one part of the room to the other. An example would be for the children to "program" their teach to move from the front of the room to the library area by using the blocks "begin," "forward," "forward," "turn left," "forward," and "end." Teachers should give the students one practice round and then instruct their students to program them to make a new friend by walking to the other side of the room, lighting up (as if they had just met the other person), and sing (because they are happy to have a new friend). Teacher should feel free to adapt this game based on the needs of their students.

Feelings Journal: Students will demonstrate emotional competency by writing and drawing in their Feelings Journals about how they felt in a certain situation. They will fill in their "I feel _____ when I _____" statement. Teachers can help with writing. This will be used in the next lesson for final project.

Feelings Check-in: Using the Feelings Poster, students will check-in with their own emotions by drawing how they are feeling each day.

Collaboration Web: As children progress through the lesson, they will complete their collaboration webs. They will draw lines from their picture to the pictures of any classmates who give them help. If children say they didn't receive any help, remind them to think of if they talked with a friend or got any ideas by looking at another classmate's project.

Free Play: Have students practice programming each other, similar to the "Program the Teacher" activity. Students should be in groups of three or four and practice using the programming blocks.

Lesson 3
Feelings Project

Overview: Children will build, decorate, and program their robot to act out their "I feel _____ when I _____" statement from Lesson 2 of their Feelings Journal. During the course of this lesson, students will put to use all of the concepts that they have learned in previous lessons. Students will also have the opportunity to use craft and recycled materials to decorate and personalize their robots.

Note: This lesson can be broken up into several sessions to accommodate the pace of the class. Additionally, content may be added or deleted based on the understanding of the students. It is up to the teacher when to complete each part of the project.

Prior Knowledge	Objectives	
	Students will understand that...	Students will be able to...
• How to build and program a KIWI robot • The order of the blocks dictates the order in which the robot executes the instructions • The definition of the word "feelings"	• They can program their robots to act out emotions that humans feel	• Create robotics projects that reflect their own emotions and experiences • Share their own emotions and hear about the emotions and experiences of their classmates and teacher

Materials / resources:

- Robotic parts for each child to make a robot, plus extra parts, a screwdriver, and batteries
- Crafts and recycled materials for robots and for building an environment for them to run in
- Feelings Journals (see Appendix B)
- Small icons for cutting and taping/gluing in the Feelings Journals (see Appendix D)
- Feelings Poster (see Appendix C)

Activity description

Warm-Up: Refer to Lesson 2 of the Feelings Journal activity "I feel _____ when I _____". Have students act out in pairs what they wrote and drew.

Introduce the concepts and the task: "Today we will be starting our feelings projects! We will be using what we wrote about in our Feelings Journals to program our robots."

Lesson 3 Vocabulary:

Students should become familiar with the following words:

Emotions -another word for feelings
Curious – wanting to learn more
Scared- another word for feeling afraid
Jealous – wishing that you had something of another person
Peaceful- being calm
Brave- not being afraid to try something new
Proud – having self-pride

A Teacher may add vocabulary words based on what he/she feels is appropriate for his/her class

<u>*Peace Circle:*</u> The teacher will review "The Feelings Book" and remind students about their discussion about emotions. Children will have a chance to ask questions about feelings and about the robotic concepts that they discussed in Lesson 2. Then, the teacher will introduce the feelings project, which will be for students to program their KIWI robots to act out their "I feel ____ when I ____" statements from their Feelings Journal.

There are a variety of programs that students can come up with to have their robots act out their emotions. While some students may come up with complex ideas for what they want their robots to do, it is important to encourage creativity because the robotic actions are limited by the blocks that are in the robotics kit. Remind students to problem solve and try out different programs if they are not sure what to do. Teacher should also encourage students to try out different combinations of programming blocks before deciding on their final programming sequence.

<u>Individual work</u>: Children will work individually to plan, design built, and program their KIWI robot to act out their "I feel ____ when I _____" statement. In their Feelings Journal under Lesson 3, there is a place for students to cut and paste programming icons to represent the program that they want to give to their robot.

After students have finished programming their robots, children can use any art materials available to decorate their robots to represent themselves and/or the program they are acting out. They can use popsicle sticks, tape, and other materials (except glue) to attach their decorations to their robot . If students have extra time, they can also create a setting for their robot.

Peace Education Connection:

This curriculum aims to achieve emotional competency for kindergarteners, as well as teachers and parents. According to Cohen (2006), social-emotional programs fail because parents who are not included in the implementation process feel as though the school is going gain their values system (p. 220). Therefore, collaboration and involvement with parents is imperative.

After the completion of the curriculum, teachers are encouraged to have a "Parent Night" where students can show their final projects to their own parents and parents of their classmates. This is a great opportunity for students to show off their work and for parents to get involved and understand why SEL and peace education are essential to the classroom environment. It also gives a chance for parents to connect with their children and understand how they are feeling.

For this activity, have students write invitations for their parents to come for Parent Night.

Peace Circle (Presentations): Students share:
    a.   their "I feel _____ when I _____" statement
    b.   their personalized robots
    c.   why they chose the features they did for their robot
    d.   the program they made and what each block represent
    e.   anything that was hard, easy, surprising, interesting, etc. about the process.

Feelings Check-in: Using the Feelings Poster, students will check-in with their own emotions by drawing how they are feeling each day.

Collaboration Web: As children progress through the lesson, they will complete their collaboration webs. They will draw lines from their picture to the pictures of any classmates who give them help. If children say they didn't receive any help, remind them to think of if they talked with a friend or got any ideas by looking at another classmate's project.

Appendix A

*Robotics across Themes/Extension*This curriculum is extremely flexible, and can be used to teach many themes across peace education. The above lessons teach emotional competency and conflict resolution, but can be easily extended to address diversity, global citizenship, and other peace education concepts. Below are some suggestions for extension using activities and books on the theme of cultural connections.

Recommended Books:

The Color of Us by Karen Katz

We are Same, We are Different by Bobbi Kates

Recommended Activities:

Songs and Dances from Around the World:

Spend a week exploring children's songs and dances from around the world! Encourage children to bring in songs from their own language, cultural, or religious background to share with the class during Peace Circle time. Have the children choose one of the new dances they've learned and program their robot to perform it for the class!

Examples:

Hava Nagila- http://www.youtube.com/watch?v=LgvKCucx0oU&feature=related

Hula- http://www.youtube.com/watch?v=leLfa2FTin8&feature=related

Country Line Dance- http://www.youtube.com/watch?v=QIP_VFXdIJQ&feature=related

Persian Dance- http://www.youtube.com/watch?v=4oyi_sqNDmI

Explore Your Family History

Prior to this class, have students interview someone at home to find out about their cultural and religious background. What country is their family from? Do they speak any other languages? What religion do they practice? Have students create a robot, and decorate it to represent the person you interviewed. You might choose to use flags, symbols, words, pictures, or colors to help depict their culture. Share robotics with the class during the Peace Circle.

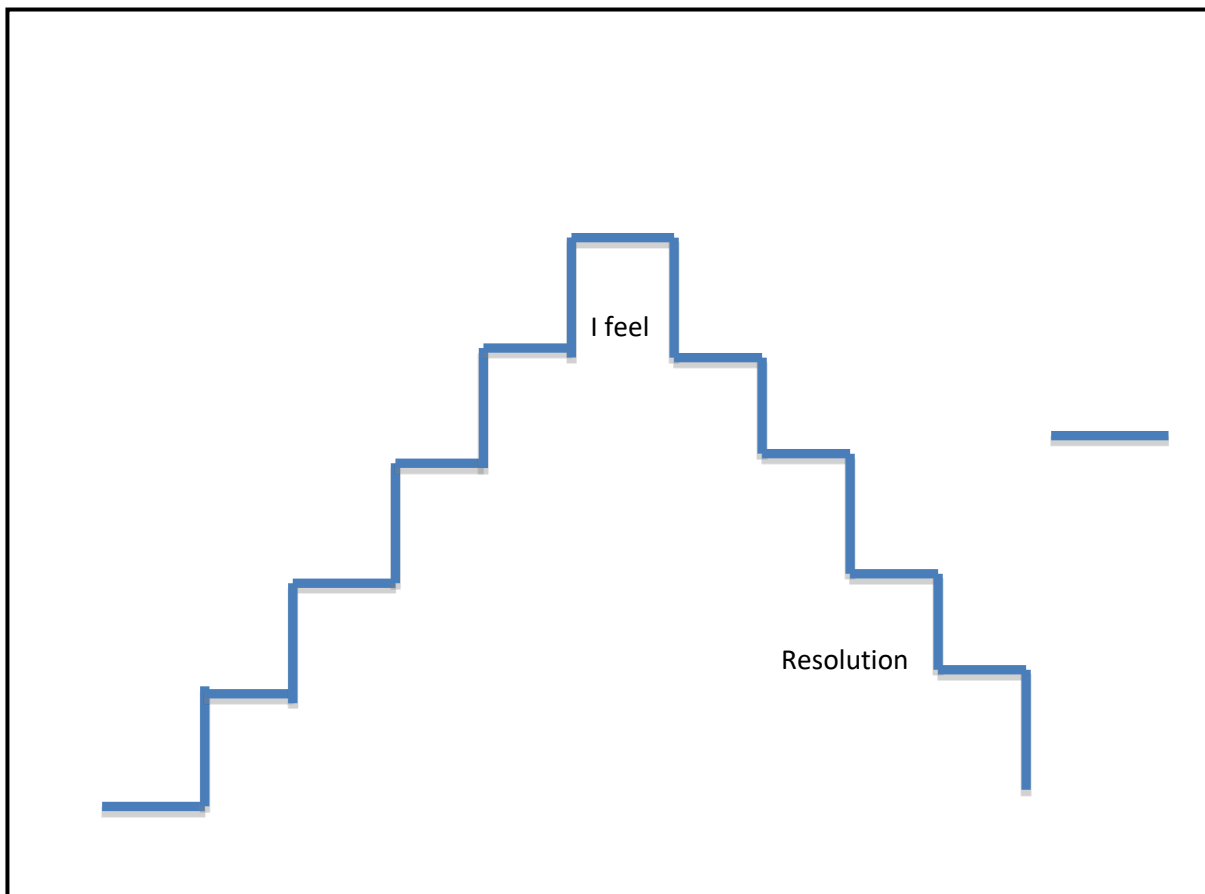# Name:_____

MY FEELINGS JOURNAL
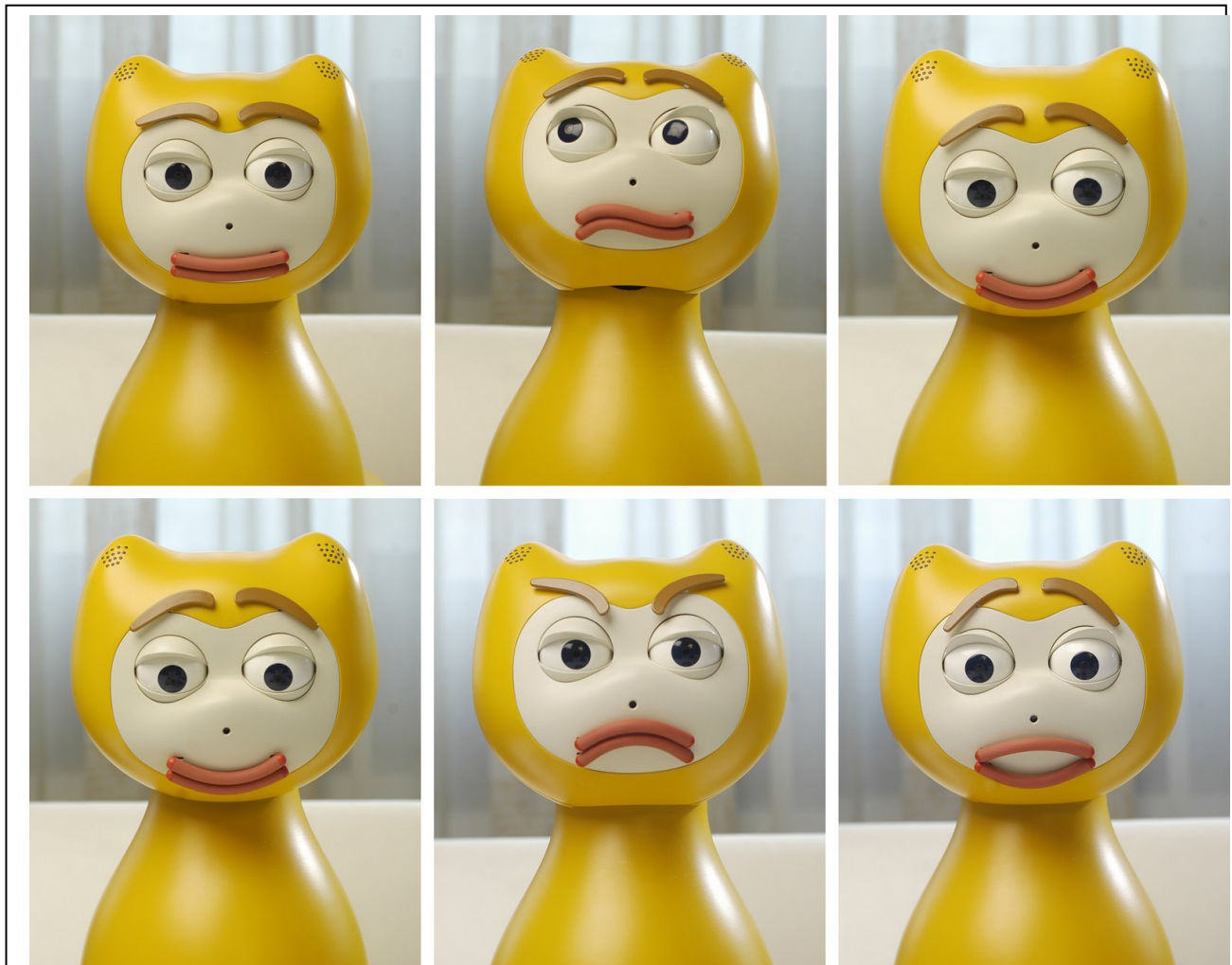
Lesson 1: Uh-Oh Escalator

I had an uh-oh moment when _____.

It made me feel _____.

It was resolved by _____.

After, I felt _____.

Draw your uh-oh escalator:

I feel

I feel

Resolution

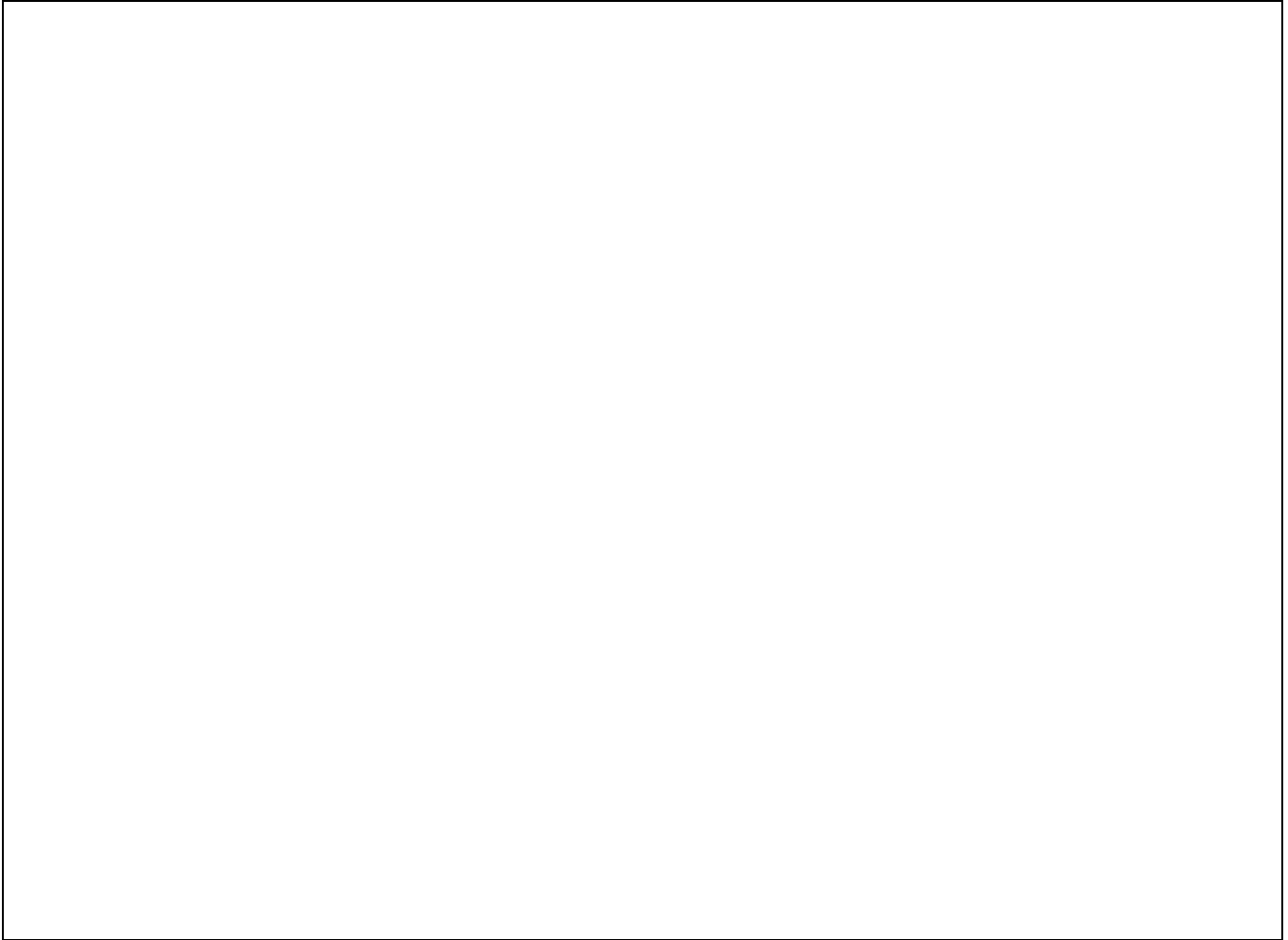# Lesson 2: My Feelings

I feel _____

when I _____

_____.

Here's a picture of what I am doing:
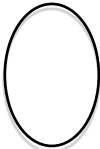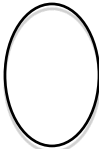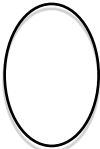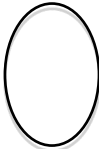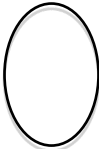
Lesson 3: Planning My Robotics Project
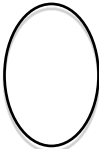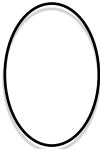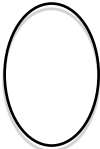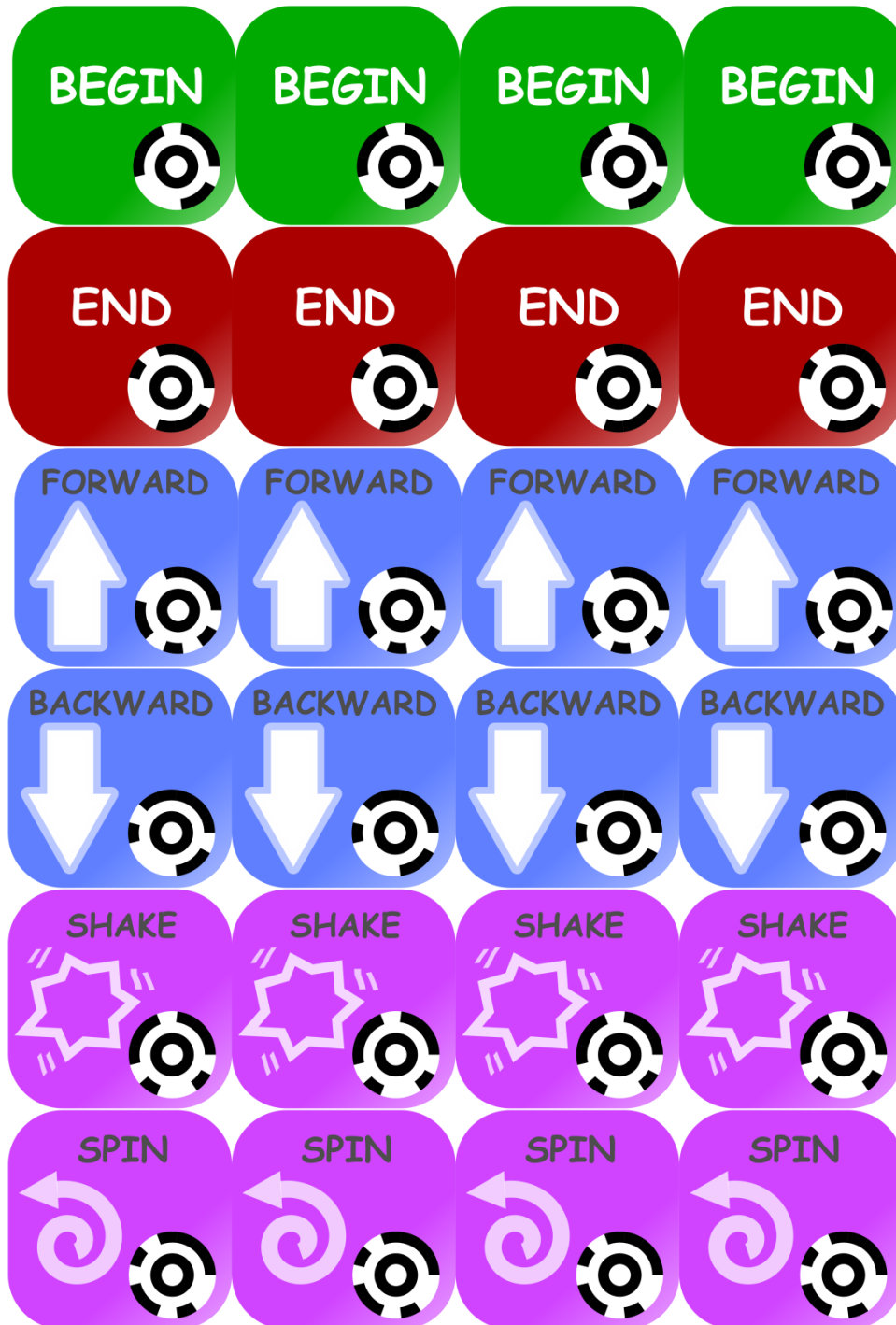
Here are the programming icons that I want to use:

My robot is

_____

_____

_____.

Today I feel…

	Monday	*Tuesday*	*Wednesday*	*Thursday*	*Friday*
Emma	⬭ _____	⬭ _____	⬭ _____	⬭	⬭ _____
Mollie	⬭ _____	⬭ _____	⬭ _____	⬭ _____	⬭ _____

These are the programming icons that children will use to program their robots. These icons can be cut out and pasted into Lesson 3 activity of the Feelings Journal.

BEGIN	BEGIN	BEGIN	BEGIN
END	END	END	END
FORWARD	FORWARD	FORWARD	FORWARD
BACKWARD	BACKWARD	BACKWARD	BACKWARD
SHAKE	SHAKE	SHAKE	SHAKE
SPIN	SPIN	SPIN	SPIN

List of Materials

Robotics materials

- 1 set of robotic parts for each child, plus extras of each part: KIWI body, 3 motors, light actuator, sound sensor, distance sensor, light sensor, 2 wheels
- 1 screwdriver (in order to open the battery pack)
- Batteries (each KIWI robot runs on 4 AA batteries).

Programming materials:

- 1 set (25 blocks) of tangible programming blocks for at least every two students, regardless of whether they are working together or separately.

Art Materials

- Various art materials including paper, scissors, markers, tape, and recyclable materials

Teaching materials:

- Feelings Poster
- Feelings Journals
- Programming icons on paper for students to cut and tape / glue into their Feelings Journals
- Collaboration Webs

(image taken by DevTech Research Group)

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