Discovering 4-H Cloverbuds through SCRATCH jr

Facilitator's Guide

MISSISSIPPI STATE UNIVERSITY™ EXTENSION

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Contents

Welcome to the volunteer *Facilitator's Guide* for Discovering **4-H Cloverbuds** through ScratchJr

This curriculum is designed for 4-H Cloverbuds ages 5–7 years old. Being a 4-H volunteer means you will have an opportunity to help children develop their potential. Research indicates that, if children are not introduced to STEM-related activities by the time they are in third grade, their likelihood of pursuing STEM in the future declines significantly. By engaging children early with experiential learning opportunities related to robotics, they can develop the life skills necessary to be successful in a digital economy.

At first, becoming a volunteer may seem overwhelming. It may seem that the 4-H'ers are more knowledgeable about the technology and more comfortable with coding than you are; however, there are many areas where you can contribute. You can provide a safe place for children to engage in positive learning opportunities where they can develop a sense of belonging and purpose. You can place the children in your group on a path to future success. Another important purpose you have is to help children learn how to persist in the face of difficulty. Learning to overcome obstacles–such as debugging a program or working with teammates who have differing views–is a very important life skill. The primary focus should be on engaging 4-H Cloverbuds with meaningful fun where they can actively participate as individuals and within a team.

The Discovering 4-H Cloverbuds through ScratchJr curriculum is designed around the experiential learning model and the 4-H slogan "Learn by Doing." In the experiential learning model, the first step is to allow children to explore with little to no help from you. This can be quite difficult to do. However, both 4-H and coding are rooted in this constructivist learning theory. The constructivist learning theory is that children learn best when they are able to experience things firsthand and construct learning from their environment. Each lesson in the Discovering 4-H Cloverbuds through ScratchJr curriculum is broken down into the five steps shown in the model.

The lessons are 90 minutes long, but many may be scaled up to include new learning opportunities as they arise from the participants' personal discoveries. Or they can be broken down to accommodate whatever time your club has. They also can be used in conjunction with 4-H Robotics programming curriculum.

Experiential Learning Model

Image from University of Minnesota Extension 4-H (http://www.extension.umn.edu/source/winter-2013/4-h-prepares-youth-to-lead-and-succeed/). Adapted from D.A. Kolb, 1984.

Practical Ideas to Make Your Program Successful

Each lesson is 90 minutes long. These lessons can be expanded or scaled back, depending on your time and audience. Use your best judgment, but be sure 4-H Cloverbuds get an opportunity to engage in hands-on learning. Take your time and have fun.

You could host a 4-H Cloverbud Coding Camp for two half-days or offer the lessons at your regularly scheduled meetings. You will know what works best for your 4-H'ers. Be sure to build in some extra time at the end for participants to prepare for the Open House/Parent Party.

Consider making your space more 4-H Cloverbud-friendly by using smaller tables and chairs that children can easily sit and work in. Encourage an atmosphere of collaboration and sharing by having children ask each other for help first. If some children excel in a particular area, encourage them to help others who are struggling. Also, pair up 5-year-old Cloverbuds with 7-year-old Cloverbuds so that the older 4-H'ers can mentor the younger ones. Another helpful idea is to enlist your teen 4-H members to serve as helpers. One older 4-H teen for every four 4-H Cloverbuds is extremely helpful. Remind helpers that they should not do the work for the Cloverbuds but rather help them figure out ways to accomplish the task themselves.

Using iPads to create stories is extremely exciting for young 4-H Cloverbuds. However, sharing an iPad can be tricky when the creative juices are flowing. Think about using a timer to help children know when they have 3 minutes left on the iPad before they will need to switch with their partner. Remind them to work together to create the story or game, and then take turns helping each other program.

Children are very excited about their coding creations. Unfortunately, it isn't possible for each person to take home an iPad. This means that artifacts will be extremely important to participants and their parents. Artifacts include the 4-H Cloverbud lapel pin and certificate. Consider emailing participants' ScratchJr stories to their parents. Or take photos of the children working, and then print these pictures to display at the Open House/Parent Party.

Always remember the primary reason children are at your program is to have fun in a safe environment where they can grow their Head, Heart, Hands, and Health.

4-H CLOVERBUD AGES AND STAGES

Adapted from Scott D. Scheer, PhD, State 4-H Extension Specialist, The Ohio State University.

Characteristics of 5- and 6-year-olds

Physical

- Energetic
- Learn to cut with scissors

Social

- Like to play with other children; are generally sociable
- Cooperate
- Usually obey rules
- Enjoy the process; end product not important

Emotional

- Desire affection and adult attention
- See situations from own point of view
- Learn self-control in groups
- Begin "selective hearing"

Intellectual

- Need clear and simple directions
- Have 10- to 15-minute attention span (if really interested)
- Learn best by exploring "real" materials

What You Can Do with 5- and 6-year-olds

- Help them work together on 4-H Cloverbud activities.
- Plan activities with materials that are hands-on.
- Provide instructions both visually and verbally.
- Keep activities short.
- Engage the children in cooperative-learning activities.
- Plan activities that include large motor skills (jumping, running).
- Plan activities that introduce fine motor skills (writing, cutting, drawing).
- Encourage sharing and listening.
- Provide opportunities for adult-child interaction.
- Plan activities that are broken up by physical movement/exercise.
- Let the children know you care.

Characteristics of 7-year-olds

Physical

- Usually grow slowly and steadily
- Like repetitious activities, such as bouncing a ball or jumping rope

Social

- Want to join clubs
- Think about the future and other people

Emotional

- Sensitive to personal criticism and get upset easily
- Want to help with decisions
- Fear school failures and peer rejection
- Friends are important; family is still tops
- Begin to empathize with others' feelings

Intellectual

- Develop a sense of right and wrong
- Assert individuality
- Are very concerned about the rules
- Love to collect things

What You Can Do with 7-year-olds

- Provide encouragement in noncompetitive settings.
- Give them simple responsibilities and the option of choosing their activities.
- Select activities that stimulate their curiosity and creative abilities.
- Explore future career possibilities.
- Promote active involvement in 4-H Cloverbuds.
- Be sensitive to their needs and promote social activities with other children.
- Provide physical activities to meet their skill levels.
- Give clear descriptions about how to be involved in 4-H Cloverbuds.
- Help the children to develop friendships.
- Encourage them to develop and make collections of things.

GUIDELINES FOR 4-H CLOVERBUD PROGRAM

Activity-Based

- A variety of short-term experiences is required for this age group. Young children have short attention spans, especially if there are distractions around them.

Cooperative-Learning Centered

- Activities and lessons are done in small groups.

Noncompetitive

- Children are engaged in activities that are noncompetitive and do not set up categories or classes that create inequities.

Safety

- Special consideration must be given to ensure the safety of 4-H Cloverbud-aged children.

Age-Appropriate

- The activity should be designed at the Cloverbud age level–5–7 years old.

Specialized Activities

- Activities for 4-H Cloverbuds should be different from activities designed for older members.

	4-H CLOVERBUDS	OLDER 4-H MEMBERS (8–18 YEARS OLD)
TYPE OF LEARNING	activity-centered	project-centered
TYPE OF INSTRUCTION	leader-directed	self-study; individual or leader-directed
RECOGNITION	participation	competitions, achievement of standards, achievement of goals, and participation
LEARNING RESOURCES	activity manuals	project manuals

Oriented for Success

- Allow children to gain confidence and promote self-esteem by mastering 4-H Cloverbud activities.
- Any activity must meet the above parameters and 4-H Cloverbud objectives, such as promoting self-understanding (self-esteem) by mastering 4-H Cloverbud activities.

Opportunities

- Children can exhibit work completed in their 4-H Cloverbud clubs or groups in the Clover Shop in the 4-H Village during the State Fair each year. Please refer to the 4-H Village Exhibit's list for specifics. You could also develop a 4-H Clover Shop at the county level!
- 4-H Cloverbuds may also create a robotic animal using either the LEGO WeDo or the Dash robot and showcase at the Robot Round-up during 4-H Day at the State Fair.

Experiential Learning Cycle

- Activities should be fun, positive, and focused on the five general life skill areas that the experiential learning model highlights.

4-H PLEDGE AND TRADITIONS

4-H Emblem . . .

- The 4-H Emblem is a green four-leaf clover with a white H on each leaf. The H's stand for HEAD, HEART, HANDS, and HEALTH

4-H Pledge . . .

- "I pledge –
  My HEAD to clearer thinking,
  My HEART to greater loyalty,
  My HANDS to larger service,
  My HEALTH to better living,
  for my club, my community, my country, and my world.

4-H Motto . . .

- "To Make the Best Better"
  Around the country, 4-H'ers have set their goals for 4-H club work by this motto: "To Make the Best Better."

4-H Slogan . . .

- "Learn By Doing"
  The "Learn By Doing" slogan encourages 4-H members to learn new skills, be responsible for their actions, and express their own creativity.

4-H Colors . . .

- The white in the 4-H flag symbolizes purity and high ideals. The green, nature's most common color, represents life, springtime, and youth.

Curriculum Overview and 4-H Measures

These lessons are based on the 4-H experiential learning model. They are designed to be used in mixed-age groups of children 5–7 years old. Additionally, these learning modules comply with the 4-H General Common Measures. However, these measures generally apply to children in 4th to 8th grades. When appropriate, notes on these measures are printed next to the activity to help Extension agents and volunteers begin to incorporate the 4-H measures in programming. Please use the tables below as a reference when using the individual lessons.

4-H General Common Measures

They are referenced in the following manner: C1a1 (Common/Outcome 1/Indicator a/Item 1):

OUTCOME	INDICATOR	ITEMS	NOTES
1. Make positive choices	a. Children will demonstrate responsibility, critical-thinking, and problem-solving skills through informed decision making.	1. I use information to make decisions. 2. I am comfortable making my own decisions. 3. I take responsibility for my actions.	
2. Communicate effectively	a. Children will demonstrate the ability to communicate through multiple methods and media.	1. I am comfortable sharing my thoughts and feelings with others. 2. I can use technology to help me express my ideas. 3. I listen well to others. 4. I am respectful of others. 5. I have the confidence to speak in front of groups. 6. I know who I can go to if I need help with a problem.	
3. Build connections	a. Children will develop positive and sustained relationships.	1. I work well with other children. 2. I can work successfully with adults. 3. I have friends who care about me.	
4. Contribute	a. Children will become citizens who contribute to their community and world.	1. I am someone who wants to help others. 2. I like to work with others to solve problems. 3. I have talents that I can offer to others.	

4-H Science Measures

They are referenced in the following manner: C1a1 (Common/Outcome 1/Indicator a/Item 1):

OUTCOME	INDICATOR	ITEMS	NOTES
1. Interest and engagement in science	a. Children will express interest and be engaged in science-related activities.	1. I like to see how things are made or invented. 2. I like experimenting and testing ideas. 3. I get excited about new discoveries. 4. I want to learn more about science.	
2. Positive attitudes and aspirations toward science	a. Children will express positive. attitudes about science. b. Children will see science in their futures and recognize the relevance of science.	1. I like science. 2. I am good at science. 3. I would like to have a job related to science. 4. I do science activities that are not for school.	
3. Develop science skills and abilities	a. Children will demonstrate a capacity for science process skills.	1. I can do an experiment to answer a question. 2. I can tell others how to do an experiment. 3. I can explain why things happen in an experiment.	
4. Apply learning; make a contribution through science	a. Children will apply science skills to issues in their communities.	1. I taught others about science.	

ScratchJr Curriculum and the 4-H General Common Measures and Science Measures

LESSON		MEASURES
Welcome to 4-H		C1a1, C2a1, C2a2, C2a3, C2a4, C2a5, C3a1, C3a2,C4a2 S1a1, S1a2, S1a3, S2a1, S3a1
Let's Think About It! (Head)		C1a1, C1a2, C2a1, C2a2, C2a3, C2a4, C2a5, C3a1, C3a2, C4a2 S1a3m S2a1, S3a1, S3a3
I Belong (Heart)		C1a1, C1a2, C2a1, C2a2, C2a3, C2a4, C2a5, C3a1, C3a3, C4a2, C4a3
Serving Others (Hands)		C1a1, C1a2, C1a3, C2a1, C2a2, C2a3, C2a4, C2a5, C2a6, C3a1, C3a2, C3a3, C4a1, C4a2
Get Moving (Health)		C1a1, C1a2, C1a3, C2a1, C2a2, C2a3, C2a4, C2a5, C2a6, C3a1, C3a2, C3a3, C4a1, C4a2

REFERENCES

Science: http://www.mde.k12.ms.us/docs/elementary-education-and-reading-library/2018-ms_sci_ccr-stand___k-12_draft_1-3-17.pdf?sfvrsn=2

ELA: https://districtaccess.mde.k12.ms.us/curriculumandInstruction/MississippiCurriculumFrameworks/ELA/2016-MS-CCRS-ELA.pdf

Health: http://www.mde.k12.ms.us/docs/curriculum-and-instructions-library/contemporary-health-(k-8).pdf

Alignment to Frameworks and Standards

LESSON	SCIENCE AND ENGINEERING PRACTICES (SEPS)	2018 MS COLLEGE AND CAREER READINESS STANDARDS-SCIENCE	2016 MS COLLEGE AND CAREER READINESS STANDARDS-ENGLISH LANGUAGE ARTS	MISSISSIPPI CONTEMPORARY HEALTH (K-8)
Welcome to 4-H	a,b	K.5A.2, K.1B.1; 2.5.1 SL.2.1a,b,c	SL.K.1a,b; SL.1.1a,b,c;	Competencies 2 & 4
Let's Think About It! (Head)	a,b	K.1A.1, K.2.1, K.3A.1; 1.1, 1.2.1; 2.2	SL.K.1a,b; SL.1.1a,b,c; SL.2.1a,b,c	
I Belong (Heart)	a,b		SL.K.1a,b, SL.K.2, SL.K.3, SL.K.4, SL.K.5, SL.K.6; SL.1.1a,b,c, SL.1.2, SL.1.3, SL.1.4, SL.1.5, SL.1.6; SL.2.1a,b,c, SL.2.2, SL.2.3, SL.2.4, SL.2.5, SL.2.6	Competency 2
Serving Others (Hands)	a,b		SL.K.1a,b; SL.1.1a,b,c SL.2.1a,b,c	Competencies 2 & 4
Get Moving (Health)	a,b,	K.3A.2; K.3B.1; 2.3B.1	SL.K.1a,b; SL.1.1a,b,c; SL.2.1a,b,c; W.K.2, W.K.6; W.1.2, W.1.6; W.2.2, W.2.6	Competency 5

REFERENCE

ScratchJr Curriculum and the Next Generation Science Standards
http://www.nextgenscience.org/topic-arrangement/k-2engineering-design

LESSON	STANDARDS
Welcome to 4-H	K-2-ETS1-1, K-2-ETS 1-2; 2-PS1-1
Let's Think About It! (Head)	K-2-ETS1-1, K-2-ETS 1-2; K-LS1-2, 1-LS 1-1, 2-LS2-1
I Belong (Heart)	K-2-ETS1-1, K-2-ETS 1-2
Serving Others (Hands)	K-2-ETS1-1, K-2-ETS 1-2
Get Moving (Health)	K-2-ETS1-1, K-2-ETS 1-2

LESSON 1: WELCOME TO 4-H

Goal:

In this lesson, 4-H Cloverbuds will be introduced to the 4-H pledge and clover; they will also create a simple program in ScratchJr using the paint interface.

Objectives:

- 4-H Cloverbuds will demonstrate the hand motions to the 4-H pledge.
- 4-H Cloverbuds will learn that the 4-H clover is green with four white Hs–symbolizing the development of the head, heart, hands, and health.
- 4-H Cloverbuds will create a 4-H clover using the paint interface of ScratchJr.
- 4-H Cloverbuds will use the motion blocks to move the 4-H clover.

Prepare:

- Place wax paper or shallow aluminum pans at each chair.
- Place shaving cream, bowls, and spoons at each chair.
- Have copies of the 4-H pledge at each chair as the "placemat."

Materials:

- Shaving cream (one can for every two children)
- Blue and yellow food dye OR blue and yellow Kool-Aid powder mixes
- Bowls for each child's shaving cream "paint"
- Wax paper or aluminum pans
- Plastic spoons
- Paper towels to clean up any messes
- Copies of the 4-H pledge for each child
- Large color copies of the 4-H clover for each table
- 1 iPad for every pair of children
- Cable to connect the iPad to the projector
- About 50 green balloons (already blown up)
- About 25 white balloons (already blown up)
- 6 rolls of masking tape

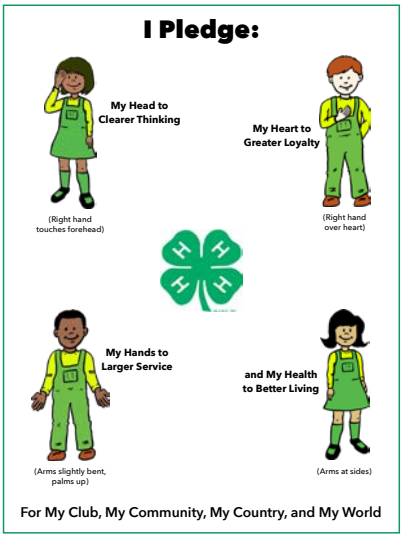
Getting Started

Greet children and their parents/guardians as they arrive. Be sure each participant has a name tag, and direct children to their stations. Each child should have a partner. Have participants review the 4-H pledge worksheet while they are waiting to begin.

Welcome (10 minutes)

Welcome to our 4-H club meeting! Let's begin by saying the 4-H pledge:

I pledge
My **head** to clearer thinking,
My **heart** to greater loyalty,
My **hands** to larger service, and
My **health** to better living,
For my club, my community,
My country, and my world.



During our time together, we are going to do many exciting things, so it is very important that you listen closely at all times. There are several things I want you to remember:

1. Be kind to your fellow 4-H'ers and treat everyone with respect.
2. If you need help, please raise your hand to ask, and one of the assistants or I will help you.
3. Be very kind to the iPads–we do not want them to get hurt.
4. Always treat your tablet like it is an extension of your arm–don't leave it somewhere by itself!
5. Remember to share. You are all very smart and can help each other learn a lot. Can we all work together to have fun and learn a lot this week?

Ask participants the following questions and allow for feedback:

> *Have any of you ever seen a 4-H clover before? Where?*
>
> *Do you see any letters on the 4-H clover?*
>
> *How many Hs are there?*

Those Hs stand for developing your **head, heart, hands, and health**. This week, we will learn what it means to be a 4-H'er.

Introduction (20 minutes)

To begin, direct participants' attention to the can of shaving cream on the table. Ask them to squirt some of the shaving cream into their bowls. Ask them what color the shaving cream is. Hopefully it is white! Show a picture of the 4-H clover. Ask: "Do you see any white on the clover?" (Answer: The Hs are white.)

Demonstrate the following:

Tell participants that 4-H'ers are children, like themselves, who come together to learn new things and have fun. Each person is unique (mix a little of the yellow Kool-Aid powder mix into the shaving cream) and different (mix a little of the blue Kool-Aid powder mix into the shaving cream), but when we work together, we can create fun memories (shaving cream should be green).

Tell children to use the materials in front of them to create green shaving cream. Help them as necessary, but remind them to work in pairs or ask other participants for help first. Once they have created green shaving cream, ask them to draw a clover on their wax paper using the shaving cream.

Questions to ask:

> 1. *How is the clover formed?*
> 2. *Which direction is the stem pointing?*
> 3. *How will they create the white Hs?*
> 4. *Was it difficult to make the white shaving cream green?*

Once everyone has had a chance to create their clovers, direct them to clean up their work areas and wash their hands. Once everyone is done, go on to the next section.

Experiencing (25 minutes)

Have children pair up. Give each pair an iPad.

Tell participants that they will learn how to code a 4-H clover to move. Coding is fun, but it can also be challenging! Was it difficult to get just the right mix of yellow and blue to make green? Like our shaving cream experiment, coding can take several attempts to get the results we want.

Connect the teacher iPad to the projector:

- Show participants how to open the ScratchJr app and create a new project.
- Show them the "sprite" (cat), and show them how to delete it.
- Tap the new sprite (character) button.

- Open the Paint Editor.
- Ask children to experiment with the Paint Editor to create a 4-H clover.
- Once they are satisfied with their clover, have them tap the checkmark in the upper right-hand corner.
- Now that the clover character is on the page, show children the **motion** blocks. Have them stand up and demonstrate what each block would make the clover do.
- Next, tell children that, just like their brain has to tell their legs to move forward, backward, and sideways, a program has to have something to tell it what to do. Show them the triggering blocks. When one of these is selected and dragged into the programming area, it will start the code. Show them how to drag the **start on green flag** block to the programming area.
- Next, tell them to tap on the motion blocks. Show them how to attach the motion block to the start on green flag block.
- Show them how to press the green flag in the upper right-hand corner to start the code.
- Give them time to create their own 4-H clover in motion.

Sharing (10 minutes)

Allow each pair of 4-H Cloverbuds to connect their iPad to the projector and share their project with the rest of the group. Highlight unique concepts or original ideas presented in their code.

Processing (5 minutes)

Ask children the following questions:

1. What worked well? What didn't work well?
2. What were some issues that each group seemed to have? How could they "fix" the issues or problems?

Generalizing (10 minutes)

Show the PowerPuff Girls coding video found on YouTube: **https://www.youtube.com/watch?v=4ilb-0Be1nug&index=3&list=PLg6KfZlgBuDVKgKzVzY8Jqhy8MX6sEnrv**

Ask participants how they would use coding. What would they create?

Applying (10 minutes)

Break Cloverbuds into groups of four to six. Give each group a roll of masking tape. Have each group elect a "coder." The coder will tell the other members of the group what to do. The other members of the group will be motion blocks. Tell the children that each group will have 5 minutes to create a 4-H clover using the green and white balloons. They can use only each other and the roll of masking tape to form the 4-H clover. Give teams 3–4 minutes to work through the engineering design process of creating their 4-H clover (plan how they are going to do it). Once the time is up, tell each team to get ready to start the challenge.

Give teams 5 minutes to create their 4-H clovers. Once the time is up–or the balloons are all gone–have each team showcase their 4-H clover.

References

ScratchJr Interface Guide. Retrieved from: https://www.scratchjr.org/pdfs/scratchjr-interface-guide.pdf

ScratchJr Block Descriptions. Retrieved from: https://www.scratchjr.org/learn.html#blocks

LESSON 2: LET'S THINK ABOUT IT! (HEAD)

HEAD to clearer thinking: problem-solving, communication, decision-making

Goal:

In this lesson, 4-H Cloverbuds will focus on the first H in 4-H–the head! Children will create a story using ScratchJr. They will build important decision-making and communication skills.

Objectives:

- 4-H Cloverbuds will define the term algorithm.
- 4-H Cloverbuds will plant a seed using an algorithm.
- 4-H Cloverbuds will create an algorithm to plan their story in ScratchJr.
- 4-H Cloverbuds will use the **look** blocks to "grow" a plant.
- 4-H Cloverbuds will use the **go to page** block to create a multi-page story.

Prepare:

- Copy the Real-Life Algorithms worksheet for each participant: **https://code.org/curriculum/course1/6/Activity6-RealLifeAlgorithms.pdf**

Materials:

- Soil
- Recycled yogurt cups or other recycled cups
- Water
- Snack mix ingredients; check for allergies first! Feel free to modify the ingredients:
  - Cereal
  - Pumpkin seeds
  - Dried cranberries
  - Chocolate candies
  - Pecans
- Sharpies (to write names on the cups)
- Paper for each child
- Scissors for each child
- Glue for each child
- Index cards
- Measuring cups for cereal, pumpkin seeds, dried cranberries, chocolate candies, pecans
- Large mixing bowl
- Seeds and what they produce (pumpkin seeds and a picture of a pumpkin, apple, wheat, etc.)
- A copy of Real-Life Algorithms for each child

Getting Started

Greet young children and their parents/guardians as they arrive. Be sure each participant has a name tag, and direct children to their stations. Each person should have a partner.

Welcome (10 minutes)

Welcome to our 4-H club meeting! Let's begin by saying the 4-H pledge:

I pledge
My **head** to clearer thinking,
My **heart** to greater loyalty,
My **hands** to larger service, and
My **health** to better living,
For my club, my community,
My country, and my world.

Ask children if they remember the rules from their last meeting. If not, go over them again:

1. Be kind to your fellow 4-H'ers and treat everyone with respect.
2. If you need help, please raise your hand to ask, and one of the assistants or I will help you.
3. Be very kind to the iPads–we do not want them to get hurt.
4. Always treat your tablet like it is an extension of your arm–don't leave it somewhere by itself!
5. Remember to share. You are all very smart and can help each other learn a lot. Can we all work together to have fun and learn a lot this week?

Ask the following questions and allow for feedback:

1. Does anyone remember what we did the last time we were together?
2. What coding blocks did we use?

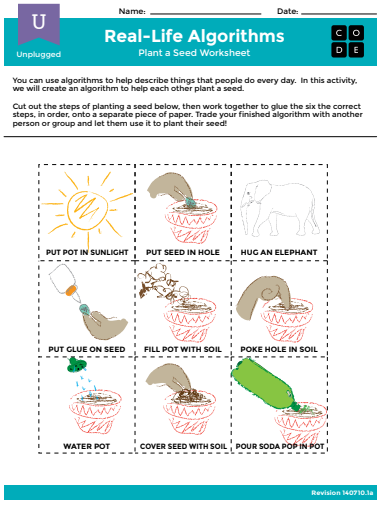
Introduction (20–30 minutes, depending on how much time you spend on seeds)

Tell children that they have a very special project to work on today. Today, they will be planting seeds. Show children various types of seeds and see if they can identify what they will grow into. Remind children that something very small can grow into something very big! Seeds are very important: cotton seeds sprout into cotton that we use for making clothes, and wheat seeds turn into grain that we use for making bread. What other things can you think of that come from seeds?

Your local Extension agent or agronomic specialist should be able to provide seeds for children to look at or talk to the children about seeds. Also see:

Seed Identification: **http://extension.msstate.edu/publications/publications/seed-identification**

4-H Seed Judging: **http://extension.msstate.edu/publications/publications/4-h-seed-judging**


Name: _____ Date: _____

U Unplugged

Real-Life Algorithms
Plant a Seed Worksheet

C O D E

You can use algorithms to help describe things that people do every day. In this activity, we will create an algorithm to help each other plant a seed.

Cut out the steps of planting a seed below, then work together to glue the six the correct steps, in order, onto a separate piece of paper. Trade your finished algorithm with another person or group and let them use it to plant their seed!

Revision 140710.1a

Next, explain that planting seeds will require the children to follow a certain set of steps. Give each child a copy of the Real-Life Algorithms: Plant a Seed worksheet. Tell children that there are nine pictures on the page. Their job is to cut out the pictures and glue them to a plain sheet of paper in the order needed to plant a seed.

Once the children have finished, have them exchange papers with each other. Tell children that they must follow the steps exactly on the page to plant a seed. Show children where to find the cups, soil, water, etc.

After everyone has planted their seeds, explain that following a list of steps helps us finish a task. This is called an algorithm.

Ask children what types of algorithms they use every day.
(Tying shoes, brushing teeth, and so forth)

Experiencing (25 minutes)

Have children pair up. Give each pair an iPad.

Tell children they will use ScratchJr to create a step-by-step guide to planting a seed. Remind children that, when we follow a series of steps to complete a task, that is called an algorithm. Tell the children they will be creating an algorithm for others to follow.

Give each child four index cards; ask them to draw their step-by-step guide to planting a seed on the four cards.

Connect the teacher iPad to the projector:

- Show children how to open the ScratchJr app and create a new project.
- Show children the "sprite" (cat), and show them how to delete it.
- Tap the **new sprite** (character) button.
- Show children how to use the **go to** blocks to connect pages in their story.
- Show children how to use the **look** blocks to make an object grow or shrink.
- Give children time to create their own story.

Sharing (10 minutes)

Allow each pair of 4-H Cloverbuds to connect their iPad to the projector and share their project with the rest of the group. Highlight unique concepts or original ideas presented in their code. Work on having the children introduce themselves before they begin sharing.

For example: "Hello, my name is _____, and today I would like to share my project with you…"

This will begin to prepare children for public speaking.

Processing (5 minutes)

Ask children the following questions:

1. What worked well? What didn't work well?
2. What were some issues that each group seemed to have? How could you "fix" the issues or problems?

Generalizing (5 minutes)

Show children the BBC Learning–What Is an Algorithm? video: **https://www.youtube.com/watch?v=Da5TOXCwLSg**

Ask children how they could use coding or ScratchJr to show something. How could they help someone by creating an algorithm?

Applying (10 minutes)

Algorithms are all around us. A recipe is an algorithm. We use recipes to make yummy treats to eat. Let's follow the recipe to make a snack. Have children volunteer to measure and pour ingredients into the mixing bowl.

6 cups of cereal
4 cups of dried cranberries
4 cups of chocolate candies or morsels
2 cups of banana chips
1 cup of sunflower seeds
1 cup of baby pumpkin seeds (pepitas)

Mix all of the ingredients and serve.

References

Code.org (n.d.) Unplugged. Real Life Algorithms: Plant a Seed. Retrieved from: https://code.org/curriculum/course1/6/Teacher.pdf

PBSKids. (2002). The Berenstain Bears See, Think & Do Activity Guide. Retrieved from: http://www-tc.pbskids.org/berenstainbears/caregiver/BB_Sec_3.pdf

PBSKids. (2002). The Berenstain Bears – Grow It. Retrieved from: https://www.youtube.com/watch?v=1QvrkxuSHjs

Reginelli, D. (2016). Seed Identification. Mississippi State University Extension Service. Retrieved from: http://extension.msstate.edu/publications/publications/seed-identification

Reginelli, D. (2016). 4-H Seed Judging. Mississippi State University Extension Service. Retrieved from: http://extension.msstate.edu/publications/publications/4-h-seed-judging

LESSON 3: I BELONG (HEART)

HEART to greater loyalty: relationship and character-building; respecting self and others

Goal:

In this lesson, 4-H Cloverbuds will focus on the second H in 4-H–the heart. 4-H Cloverbuds will work in pairs to create an animated biography of one another.

Objectives:

- 4-H Cloverbuds will learn how to ask interview questions.
- 4-H Cloverbuds will use the **say and play recorded sound** blocks.
- 4-H Cloverbuds will use the camera feature to incorporate a photo into a character.

Prepare:

- No preparation.

Materials:

- Sidewalk chalk and/or sidewalk paint
- *The Berenstain Bears When I Grow Up* by Mike Berenstain

Getting Started

Greet children and their parents/guardians as they arrive. Be sure each participant has a name tag, and direct children to their stations. Each child should have a partner.

Welcome (10 minutes)

Welcome to our 4-H club meeting! Let's begin by saying the 4-H pledge:
I pledge
My **head** to clearer thinking,
My **heart** to greater loyalty,
My **hands** to larger service, and
My **health** to better living,
For my club, my community,
My country, and my world.

Ask children if they remember the rules from their last meeting. If not, go over them again:

1. Be kind to your fellow 4-H'ers and treat everyone with respect.
2. If you need help, please raise your hand to ask, and one of the assistants or I will help you.
3. Be very kind to the iPads–we do not want them to get hurt.
4. Always treat your tablet like it is an extension of your arm–don't leave it somewhere by itself!
5. Remember to share. You are all very smart and can help each other learn a lot. Can we all work together to have fun and learn a lot this week?

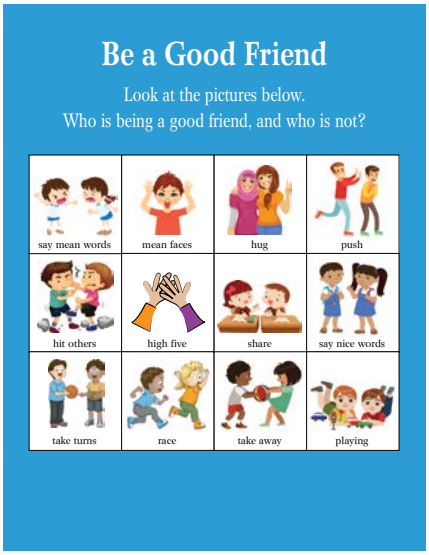
Ask children the following questions and allow for feedback:

1. Does anyone remember what we did the last time we were together?
2. What coding blocks did we use?

Introduction (20–30 minutes)

Tell children they will learn how about the second H today. This H stands for **heart**. When we learn about each other and respect each other, we can make new friends. But we need "heart" to build friendships.

Ask the children what it means to be a friend to someone. Show the Be a Good Friend! picture sheet. Ask if each picture is an example of being a good friend or a bad friend.



Tell children that, to be a good friend, we have to know about the other person. This means we have to ask questions and find out what they like or don't like. What type of questions could you ask someone to learn more about them?

1. What cartoons do you like?
2. What kind of food do you like?
3. Do you have a brother or sister?
4. Do you have any pets?

Once children have a chance to think about the type of questions they could ask, tell them they will get to interview the person sitting next to them. Interviewing means we get to ask questions of someone so that we can know them better.

Take the children outside and have them sit with their partner on the ground. Direct their attention to the sidewalk chalk and paint. Tell the children they get to ask their partner questions and draw a picture of the answers! This is to help them get ready for the iPad activity, so they need to pay attention to the answers. Remind children of the type of questions they may want to ask while they draw or paint.

Experiencing (30 minutes)

Have children pair up. Give each pair an iPad.

Tell children they will use ScratchJr to create an interview of their partner using the information they learned during their sidewalk interviews.

Connect the teacher iPad to the projector:

- Show children how to open the ScratchJr app and create a new project.
- Show children the "sprite" (cat), and show them how to delete it.
- Tap the **new sprite** (character) button. Show children how to select a character without a face. Demonstrate how to use the camera button to add a new face.
- Show children the **say** block, and demonstrate how to type a conversation.
- Show children the **play recorded sound** block, and demonstrate how to record their interview questions or responses.

Sharing (10 minutes)

Allow each pair of 4-H Cloverbuds to connect their iPad to the projector and share their project with the rest of the group. Highlight unique concepts or original ideas presented in their code. Build on previous work of having the children introduce themselves before they begin sharing.

Example: "Hello, my name is _____, and today I would like to share my project with you…"

But also tell them to add a conclusion.

Example: "In conclusion, I hope you have enjoyed my interview with…"

This will begin to prepare children for public speaking.

Processing (5 minutes)

Ask children the following questions:

1. What worked well? What didn't work well?
2. What were some issues that each group seemed to have? How could you "fix" the issues or problems?

Generalizing (5 minutes)

Watch this interview of Kid President with President Obama:
https://www.youtube.com/watch?v=TssZ9Uma1-w
Discuss what questions they asked each other to learn more about one another.

Applying (10 minutes)

Read *The Berenstain Bears When I Grow Up* by Mike Berenstain. Ask children how Brother and Sister Bear used questions to learn about different careers. What would the children like to be when they grow up? How can they learn more about being a firefighter, teacher, and so forth?

LESSON 4: SERVING OTHERS (HANDS)

HANDS to larger service: serving others, career preparation, hands-on learning

Goal:

In this lesson, 4-H Cloverbuds will learn how to serve others. Children will design a game that teaches others about bullying.

Objectives:

- 4-H Cloverbuds will define the term bullying in age-appropriate language.
- 4-H Cloverbuds will use the **start on bump**, **start on message**, and **send message** blocks.

Prepare:

- No preparation.

Materials:

- Internet connection
- Speakers

Getting Started

Greet children and their parents/guardians as they arrive. Be sure each participant has a name tag, and direct children to their stations. Each child should have a partner.

Welcome (10 minutes)

Welcome to our 4-H club meeting! Let's begin by saying the 4-H pledge:

I pledge
My **head** to clearer thinking,
My **heart** to greater loyalty,
My **hands** to larger service, and
My **health** to better living,
For my club, my community,
My country, and my world.

Ask children if they remember the rules from their last meeting. If not, go over them again:

1. Be kind to your fellow 4-H'ers and treat everyone with respect.
2. If you need help, please raise your hand to ask, and one of the assistants or I will help you.
3. Be very kind to the iPads–we do not want them to get hurt.
4. Always treat your tablet like it is an extension of your arm–don't leave it somewhere by itself!
5. Remember to share. You are all very smart and can help each other learn a lot. Can we all work together to have fun and learn a lot this week?

Ask children the following questions and allow for feedback:

1. Does anyone remember what we did the last time we were together?
2. What coding blocks did we use?

Introduction (20–30 minutes)

Tell children we will learn about the third H today. This H stands for **hands**. We can use our hands to learn new things and help others. Today we will use our hands to learn how to stand up to bullying. Ask the children to give examples of bullying. This may be a new word for young 4-H Cloverbuds. Bullying is "being mean to another kid over and over again" (stopbullying.gov). Bullying is when one child teases another, talks about hurting them, spreads rumors, or hurts them. That's not nice, is it?

Show pictures from the KidsHealth in the Classroom Bullying Teacher's Guide on the projector: **https://classroom.kidshealth.org/classroom/prekto2/problems/emotions/bullying.pdf**

Ask children if what is going on in the pictures is bullying or not.

Play the game It's My Life: **http://pbskids.org/itsmylife/games/bullies_flash.html.** Tell children that we can use games to teach people how to be friends and how not to be a bully. Today they will create a game that helps others learn about bullying.

Experiencing (30 minutes)

Have children pair up. Give each pair an iPad.

Tell children that they will use ScratchJr to create a game.

Connect the teacher iPad to the projector:

- Show children how to open the ScratchJr app and create a new project.
- Show children the "sprite" (cat), and show them how to delete it.
- Tap the **new sprite** (character) button.
- Show children an example of using the **start on bump** button.
- Demonstrate how children could use the **start on message** and **send message** blocks.

Sharing (10 minutes)

Allow each pair of 4-H Cloverbuds to connect their iPad to the projector and share their project with the rest of the group. Highlight unique concepts or original ideas presented in their code. Remind children to introduce themselves before they begin sharing and to include a conclusion at the end of their presentation.

Processing (5 minutes)

Ask children the following questions:

1. What worked well? What didn't work well?
2. What were some issues that each group seemed to have? How could you "fix" the issues or problems?

Generalizing (5 minutes)

Ask children how they could use their ScratchJr game to help others.

Ask children how they can be a friend and not a bully.

Applying (10 minutes)

Read *Stand Tall, Molly Lou Melon* by Patty Lovell. Ask children to act out how they would respond to a bully.

References

National Crime Prevention Council. (2017). McGruff the Crime Dog. Retrieved from: http://www.mcgruff.org/#/Games

PBS KIDS GO! (2005). It's my life. Retrieved from: http://pbskids.org/itsmylife/games/bullies_flash.html

The Nemours Foundation/KidsHealth. (2017). Personal Health Series: Bullying. Retrieved from: https://classroom.kidshealth.org/classroom/prekto2/problems/emotions/bullying.pdf.

U.S. Department of Health and Human Services. (2017). Stopbullying.gov. Retrieved from: https://www.stopbullying.gov/kids/webisodes/index.html

LESSON 5: GET MOVING (HEALTH)

HEALTH to better living: forming healthy habits; managing stress and change

Goal:

In this lesson, 4-H Cloverbuds will learn that being active and making nutritious choices is key to being healthy. Children will use their knowledge to create a ScratchJr story that encourages others to be healthy through exercise.

Objectives:

4-H Cloverbuds will identify the parts of a healthy plate.

4-H Cloverbuds will use the **motion** blocks.

4-H Cloverbuds will use the **set speed**, **shrink**, **grow**, and **reset size** buttons.

Prepare:

Color copy of MyPlate from choosemyplate.gov*

Materials:

Printed ScratchJr programming blocks for each table: **https://www.scratchjr.org/pdfs/blocks.pdf**

Foods from each group on a plate for children to look at and/or taste*

Measuring cups and food scales*

*Many of these items are probably available from your local Extension agent. Contact your local Extension office to see if they have any of these resources available.

Getting Started

Greet children and their parents/guardians as they arrive. Be sure each participant has a name tag, and direct children to their stations. Each child should have a partner.

Welcome (10 minutes)

Welcome to our 4-H club meeting! Let's begin by saying the 4-H pledge:

I pledge
My **head** to clearer thinking,
My **heart** to greater loyalty,
My **hands** to larger service, and
My **health** to better living,
For my club, my community,
My country, and my world.

Ask children if they remember the rules from their last meeting. If not, go over them again:

1. Be kind to your fellow 4-H'ers and treat everyone with respect.
2. If you need help, please raise your hand to ask, and one of the assistants or I will help you.
3. Be very kind to the iPads—we do not want them to get hurt.
4. Always treat your tablet like it is an extension of your arm—don't leave it somewhere by itself!
5. Remember to share. You are all very smart and can help each other learn a lot. Can we all work together to have fun and learn a lot this week?

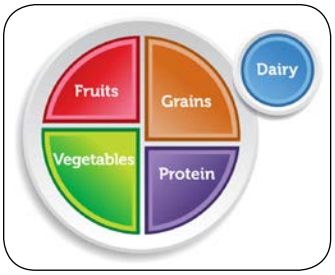
Ask children the following questions and allow for feedback:

1. Does anyone remember what we did the last time we were together?
2. What coding blocks did we use?

Introduction (20–30 minutes)

Tell children they will learn about the fourth H today. This H stands for **health**. We can have healthy bodies by eating foods that are good for us and by exercising regularly. Today we will learn about the good foods we can put in our bodies, and we will have fun exercising together.

Let's take a look at this funny plate (show the MyPlate graphic). What are all these different colors and words?



Each color represents a different food group. There are five different groups: fruits, grains, vegetables, protein, and dairy. We need some of each to keep us healthy.

Let's take a look at some different types of fruit. Allow children to sample different types of fruit. Repeat for each of the remaining food groups. Ask children which foods they liked the best and the least.

Show children how much of each food group they should eat each day: **https://www.cnpp.usda.gov/sites/default/files/dietary_guidelines_for_americans/MyPlateDaily-Checklist_1200cals_Age4-8.pdf**

Ask them how they would divide the food up for breakfast, lunch, dinner, and snacks. Tell children that exercise is just as important as healthy eating. Ask if they can give examples of exercise (running, walking, hopping, swimming, etc.).

Experiencing (30 minutes)

Have children pair up. Give each pair an iPad.

Tell children they will use ScratchJr to create a story about their favorite exercise. Once they are done with their story, they will show the story to the rest of the group so that everyone can exercise together.

Connect the teacher iPad to the projector:

- Show children how to open the ScratchJr app and create a new project.
- Show children the "sprite" (cat), and show them how to delete it.
- Tap the **new sprite** (character) button.
- Remind children where the **motion** blocks are located and what each does. Relate them to an exercise if possible.
- Show children the **set speed**, **shrink**, **grow**, and **reset size** buttons.

Sharing (10 minutes)

Allow each pair of 4-H Cloverbuds to connect their iPad to the projector and share their project with the rest of the group. Highlight unique concepts or original ideas presented in their code. Build on previous work by having the children introduce themselves before they begin sharing, and use a conclusion to wrap up their presentation.

Example:
"Hello, my name is _____, and today I would like to share my project with you…"

"…In conclusion, I hope you have enjoyed my healthy exercise story."

This will begin to prepare children for public speaking.

Processing (5 minutes)

Ask children the following questions:

1. What worked well? What didn't work well?
2. What were some issues that each group seemed to have? How could you "fix" the issues or problems?

Generalizing (5 minutes)

Why it is important to eat healthy and exercise?

How can you choose healthy food options?

How can you exercise more every day?

Applying (10 minutes)

Play a short, upbeat song for the children to listen to. Give each table a set of ScratchJr printed programming blocks. Ask each table to work together to come up with dance moves using the ScratchJr programming blocks. Children can lay out the dance moves on the floor. Have each table show off their dance moves once they are done.

References

PBS Kids. (2017). Arthur Family Health: D.W. the Picky Eater. WGBH Educational Foundation. Retrieved from: http://pbskids.org/arthur/health/nutrition/episode.html

U.S. Department of Agriculture, Food and Nutrition Service. (2012). Serving Up MyPlate – Grades 1 & 2. Retrieved from:http://www.fns.usda.gov/multimedia/tn/sump_level1.pdf

U.S. Department of Agriculture, Center for Nutrition Policy and Promotion. (2016). MyPlate Daily Checklist. Retrieved from: https://www.cnpp.usda.gov/sites/default/files/dietary_guidelines_for_americans/MyPlateDailyChecklist_1200cals_Age4-8.pdf

OPEN HOUSE/PARENT PARTY

Children are often very excited to show their parents or guardians what they have learned. Unfortunately, children are not able to take the iPads home with them to show parents, guardians, or siblings the wonderful stories they have created in ScratchJr. This is why it is a good idea to host an open house or parent party for parents, guardians, grandparents, siblings, and friends to check out what their 4-H Cloverbud has been up to!

Set a date and time for the open house, and let parents know the details when they drop their children off the first day. Send an email reminder to parents halfway through so you can get a head count. Be sure to plan the event for either the lunch hour (so parents can leave and return to work within an hour) or after work hours. Serve lots of fruits and veggies to help the children remember to eat healthy foods. Here is a sample agenda:

12–12:10 p.m.	**Parents arrive and find a seat with their child**
12:10–12:15 p.m.	**Welcome and pledge** *Select a child to lead the 4-H pledge.* *Give a general overview of 4-H and what the children have been learning this week.*
12:15–12:35 p.m.	**Recognition of 4-H Cloverbuds** *Call each 4-H Cloverbud to the front of the room and "pin" them with their 4-H Cloverbud pin. These can be purchased online at:* **http://www.4-hmall.org/Product/newitems/cloverbud-medal/M-9093.aspx**. *Be sure to highlight a unique attribute or contribution of each child.* *Present each child with a 4-H Cloverbud Coding Certificate.*
12:35–12:50 p.m.	**Children's Showcase** *Allow children to show their visitors what they have accomplished.*
12:50 p.m.	**Dismiss** *Be sure to tell each child goodbye, and give parents a copy of the Robot Rally Lift-off handout. This handout gives parents useful tips and ideas on how to encourage their children to learn coding.*

MISSISSIPPI STATE UNIVERSITY
EXTENSION

18 U.S.C. 707

This certificate hereby recognizes that

_____
(Name)

achieved a high level of coding awesomeness!

_____
(Date)

_____
(Location)

ScratchJr

I Pledge:

My Head to Clearer Thinking

(Right hand touches forehead)

My Heart to Greater Loyalty

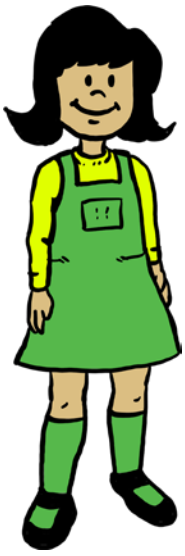
(Right hand over heart)

18 U.S.C. 707

My Hands to Larger Service

(Arms slightly bent, palms up)

and My Health to Better Living



(Arms at sides)

For My Club, My Community, My Country, and My World

Publication 3104 (POD-05-18)

Produced by Agricultural Communications.

Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. GARY B. JACKSON, Director

Be a Good Friend

Look at the pictures below.
Who is being a good friend, and who is not?

 say mean words	 mean faces	 hug	 push
 hit others	 high five	 share	 say nice words
 take turns	 race	 take away	 playing

Robot Rally LIFT-OFF

Thanks for allowing your child to participate in this 4-H robotics program. Our primary goal at this point is to create opportunities for directed, educational fun that inspire your child to have a positive attitude toward STEM. We want to encourage them to go further with STEM-related activities.

If **robots, robots, robots** are all your child can talk about, this is a great time to introduce other educational fun to keep those minds working in high gear!

We used the Dash robot available from https://www.makewonder.com/. You can find further ideas for using Dash on the MakeWonder website https://www.makewonder.com/play/ideas/. Dash is controlled using natural language programming. Natural language programming uses a sentence-like structure to create a computer program.

5-6 year olds

Another type of programming is object-oriented program. Typically, we suggest introducing 5-6 year olds to object oriented programming. Object oriented programming is a fun way to learn the logic behind programming while youth are still learning to read. Object-oriented programming resources include these:

Scratch Jr. from http://www.scratchjr.org/

Cost: Free

Scratch is an educational app that is available for both the iPad and the Android tablets. Your child can drag and drop programming blocks to create an animated story. Some of the key concepts learned are logic, loops, and debugging.

LEGO® WeDo from https://education.lego.com/en-us/lesi/elementary/lego-education-wedo

Cost: $226.95

The LEGO® WeDo robotics kits also use object-oriented programming language. These kits allow youth to create robots and then program them to perform a specific task. Programming is done on a computer, and the robot must be tethered to the computer in order for it to work.

*Depending on availability, your Extension Agent can check out a WeDo kit from the Center for Technology Outreach.

Code.org from http://code.org/educate/k5

Cost: Free

Code.org has put together over 20 hours of coding lessons for youth to explore the foundations of coding in creative, hands-on activities.

7 year olds

We encourage 7 year olds to move into natural language programming. Natural language programming starts youth on the path of text-based coding which will help them as the learn more advanced programming languages like RobotC, Java, or Python.

Scratch from https://scratch.mit.edu/

Cost: Free

Scratch is the next step up from Scratch Jr. This online program allows youth to learn the fundamentals of coding in a fun, storytelling manner. Youth create stories that spark their interest while developing their digital literacy.

Scratch with LEGO® WeDo
http://wiki.scratch.mit.edu/wiki/LEGO%C2%AE_WeDo%E2%84%A2_Construction_Set

Use your existing LEGO® WeDo kit to make Scratch come alive. Use the More Blocks option in Scratch to add a LEGO® WeDo extension.

If you are looking to unplug from the computer, try these free activities and lessons created by Computer Science Unplugged (http://csunplugged.org/) and Computer Science-in-a-Box (https://www.ncwit.org/)by the National Center for Women in Information Technology.

Computer Science Unplugged Activity Book:
http://csunplugged.org/wp-content/uploads/2015/01/unplugged-book-v1.pdf

Computer Science-in-a-Box:
https://www.ncwit.org/sites/default/files/resources/computerscience-in-a-box.pdf

Hopscotch from https://www.gethopscotch.com/

Hopscotch is a free iPad app that is very similar to Scratch. Youth program in a "sandbox" where they use their imaginations to create stories from drag and drop blocks.

Tynker from https://www.tynker.com/hour-of-code/

Cost: Free (but other curriculum is available for purchase)

Tynker offers free coding activities for youth on their Tynker Hour of Code website. Youth can choose which level to begin at, beginner or intermediate. They then have a series of challenges that build on each other. Once the child has completed each activity successfully a certificate is awarded. Additional lessons cost $75 and are available at https://www.tynker.com/parent/

Snow-tastrophe was made possible by a grant from Connect Mississippi. connectmississippi.org

By **Dr. Mariah Morgan,** Assistant Extension Professor, Extension Center for Technology Outreach.

Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. GARY B. JACKSON, Director
M2051 (06-15)

Mississippi 4-H Cloverbud ScratchJr Evaluation

This is an observational instrument designed to the influence of the 4-H ScratchJr Cloverbud Program on children who have actively participated in the program.

Please indicate today's date and select which lessons were delivered today. _____ /_____ /_____

☐ Lesson 1: Welcome to 4-H ☐ Lesson 2: Let's Think About It! (Head) ☐ Lesson 3: I Belong (Heart)

☐ Lesson 4: Serving Others (Hands) ☐ Lesson 5: Get Moving (Health)

Instructions: For each item, use an X to indicate a response that represents the number of children who exhibit experience the listed behavior/setting as a result of their involvement with the 4-H Cloverbud ScratchJr program.

1. Because of participation in the 4-H ScratchJr program, I observed that the 4-H Cloverbud children:

	None of the children	Some of the children	Half of the children	Most of the children	All of the children
Gained self-confidence and self-esteem (children displayed confidence and positive self-esteem as observed in their ability to participate in the 4-H Cloverbud activities, ask/answer questions, and interact with others).					
Improved their physical skills [children exhibited fine (writing, cutting, drawing, etc.) and gross (jumping, arm and leg movement, body coordination, etc.) motor skills].					
Gained subject-matter knowledge (children expressed verbal and nonverbal knowledge related to the subject matter content of their 4-H Cloverbud activity involvement).					
Improved in getting along with others (children were able to share, communicate, and make friends with other peers in the 4-H Cloverbud group).					
Increased decision-making skills (children were able to make decisions in regard to activity input and interaction with peers and adult leaders).					
Experienced positive relationships with caring adults (children learned and developed in an adult-leader-directed environment; a positive learning environment that was caring, supportive, and fun).					
Experienced inclusive environments (used cooperative-learning techniques as the children worked on activities together; engaged the children in curriculum that was noncompetitive without setting up categories or classes; valued and respected the diversity of all participants).					
Experienced opportunities for mastery/competence (allowed children to be creative across eight different subject areas; used the experiential learning cycle through the activities as children experienced, shared, processed, and generalized; curriculum and activities met children's needs).					
Experienced opportunities to value and practice service to others (learned to appreciate community service through 4-H Cloverbud activities; cleaned up after activities and helped each other; shared materials and respected fellow 4-H Cloverbud members).					

	None of the children	Some of the children	Half of the children	Most of the children	All of the children
Experienced an emotionally and physically safe environment (met the needs of children where they were emotionally, physically, socially, and cognitively; took special considerations to ensure the safety of 4-H Cloverbud children with low-risk, safe activities; maintained a low ratio of children to adults–about 6 to 1).					
Experienced opportunities for self-determination (success-oriented activities helped children gain confidence; used noncompetitive activities to foster intrinsic motivation; focused on the process of doing activities, rather than the product).					
Experienced opportunities for engagement in learning (fun, positive experiences for children; provided numerous subject areas of interest to the children; provided a nurturing role model who was enthusiastic and sensitive).					
Experienced opportunities to see oneself as an active participant in the future (gave children choices in upcoming activities; explored a variety of future career options; discussed and role-played the reality that what one does today often determines what happens tomorrow).					
Experienced opportunities for leadership and independence (gained skills and confidence for leadership and self-discipline; learned responsibility for decisions made and actions taken; led simple tasks).					

*Adapted from Scott D. Scheer, PhD, State 4-H Extension Specialist, The Ohio State University.

	None of the children	Some of the children	Half of the children	Most of the children	All of the children
Understand the differences among peers and how they relate to culture.					
Demonstrate ability to work in group settings without interfering with others.					
Gained mastery of a range of skills related to speaking and listening (including comprehension and collaboration as well as presentation of knowledge and ideas)					
a. Participated in collaborative conversations with peers and adults.					
b. Followed agreed-upon rules for discussions (e.g., listening to others, taking turns speaking).					
c. Continued a conversation through multiple exchanges.					
d. Confirmed understanding of a text read aloud or information presented orally by asking and answering questions or requesting clarification.					
e. Asked and answered questions to seek help, get information, or clarify something that was not understood.					
f. Used a combination of drawing, dictating, and writing to communicate about a topic.					
g. Added drawings or other visual displays to descriptions to provide additional detail.					
h. Described familiar people, places, things, and events and, with prompting and support, provided additional detail.					
i. Spoke audibly.					
j. Expressed thoughts, feelings, and ideas clearly.					

	None of the children	Some of the children	Half of the children	Most of the children	All of the children
Increased interest and engagement in STEM (Science, Technology, Engineering, and Math) (children expressed interest in science and were engaged by the science-based lessons and activities).					
Improved attitudes toward (children expressed positive attitudes and aspirations toward science).					
Developed STEM skills and abilities (such as listening, observing, searching, asking questions, gathering information, etc.).					
a. Asked questions about a problem.					
b. Defined a problem.					
c. Developed a simple model.					
d. Used a simple model.					
e. Constructed explanations.					
f. Designed solutions.					
g. Evaluated information.					
h. Communicated information.					
i. Answered questions about a problem .					

2. Number of children represented in this evaluation: _____

3. Number of girls _____ and boys _____.

4. How was this program delivered?
   - ☐ 4-H club
   - ☐ 4-H camp
   - ☐ After-school program
   - ☐ In-school program

5. Number of meetings this evaluation represents: _____

6. Number of weeks over which this evaluation occurred: _____

7. Person completing this evaluation: _____

8. Which county does this evaluation represent? _____

9. What is your role?

_____ 4-H Cloverbud volunteer leader _____ Teacher

_____ 4-H Cloverbud parent _____ Extension agent

_____ Youth worker _____ Other: _____

10. How long (e.g., months, years) have you served as a 4-H Cloverbud Volunteer Leader? _____

Thank you!

Please return this completed form to your 4-H Cloverbud leader or your Extension agent.

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