DISCOVER

4-H CODE CLUBS

(FOR BEGINNERS; GRADES K-8)

EXTENSION
UtahStateUniversity

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Paul Hill | LaCee Jimenez | Zuri Garcia | Stacey MacArthur
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Description

The Discover 4-H Clubs series guides new 4-H volunteer leaders through the process of starting a 4-H club or provides a guideline for seasoned volunteer leaders to try a new project area. Each guide outlines everything needed to organize a club and hold the first six club meetings related to a specific project area.

Purpose

The purpose is to create an environment for families to come together and participate in learning activities that can engage the whole family, while spending time together as a multi-family club. Members will experiment with new 4-H project areas.

What is 4-H?

4-H is one of the largest youth development organizations in the United States. 4-H is found in almost every county across the nation and enjoys a partnership between the U. S. Department of Agriculture (USDA), the state land-grant universities (e.g., Utah State University), and local county governments.

4-H is about youth and adults working together as partners in designing and implementing club and individual plans for activities and events. Positive youth development is the primary goal of 4-H. The project area serves as the vehicle for members to learn and master project-specific skills while developing basic life skills. All projects support the ultimate goal for the 4-H member to develop positive personal assets needed to live successfully in a diverse and changing world.

Participation in 4-H has shown many positive outcomes for youth. Specifically, 4-H participants have higher participation in civic contribution, higher grades, increased healthy habits, and higher participation in science than other youth (Learner et al., 2005).

Updated February 2015

Utah 4-H

4-H is the youth development program of Utah State University Extension and has more than 90,000 youth participants and 8,600 adult volunteers. Each county (Daggett is covered by Uintah County) has a Utah State University Extension office that administers the 4-H program.

The 4-H Motto

"To Make the Best Better!"

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.

4-H Clubs

What is a 4-H Club? The club is the basic unit and foundation of 4-H. An organized club meets regularly (once a month, twice a month, weekly, etc.) under the guidance of one or more volunteer leaders, elects its own officers, plans its own program, and participates in a variety of activities. Clubs may choose to meet during the school year, only for the summer, or both.

Club Enrollment

Enroll your club with your local Extension office. Each member will need to complete a Club/member Enrollment form, Medical History form, and a Code of Conduct/Photo Release form (print these from the www.utah4h.org website or get them from the county Extension office).

Elect Club Officers

Elect club officers during one of your first club meetings. Depending on how many youth you have in your club, you can decide how many officers you would like. Typical officers will include a president, vice president, pledge leader, and secretary. Other possible officers or committees are: song leader, activity facilitator, clean-up supervisor, recreation chair, scrapbook coordinator, contact committee (email, phone, etc.), field trip committee, club photographer, etc. Pairing older members with younger members as Sr. and Jr. officers may be an effective strategy to involve a greater number of youth in leadership roles and reinforce the leadership experience for both ages. Your club may decide the duration of officers–six months, one year, etc.

A Typical Club Meeting

Follow this outline for each club meeting:

- ☐ Call to order–President
- ☐ Pledge of Allegiance and 4-H Pledge–Pledge Leader (arranges for club members to give pledges)
- ☐ Song–Song Leader (leads or arranges for club member to lead)
- ☐ Roll call–Secretary (may use an icebreaker or get acquainted type of roll call to get the meeting started)
- ☐ Minutes of the last meeting–Secretary
- ☐ Business/Announcements–Vice President
- ☐ Club Activity–arranged by Activity Facilitator and includes project, lesson, service, etc. These are outlined by project area in the following pages.
- ☐ Refreshments–arranged by Refreshment Coordinator
- ☐ Clean Up–led by Clean-up Supervisor

Essential Elements of 4-H Youth Development

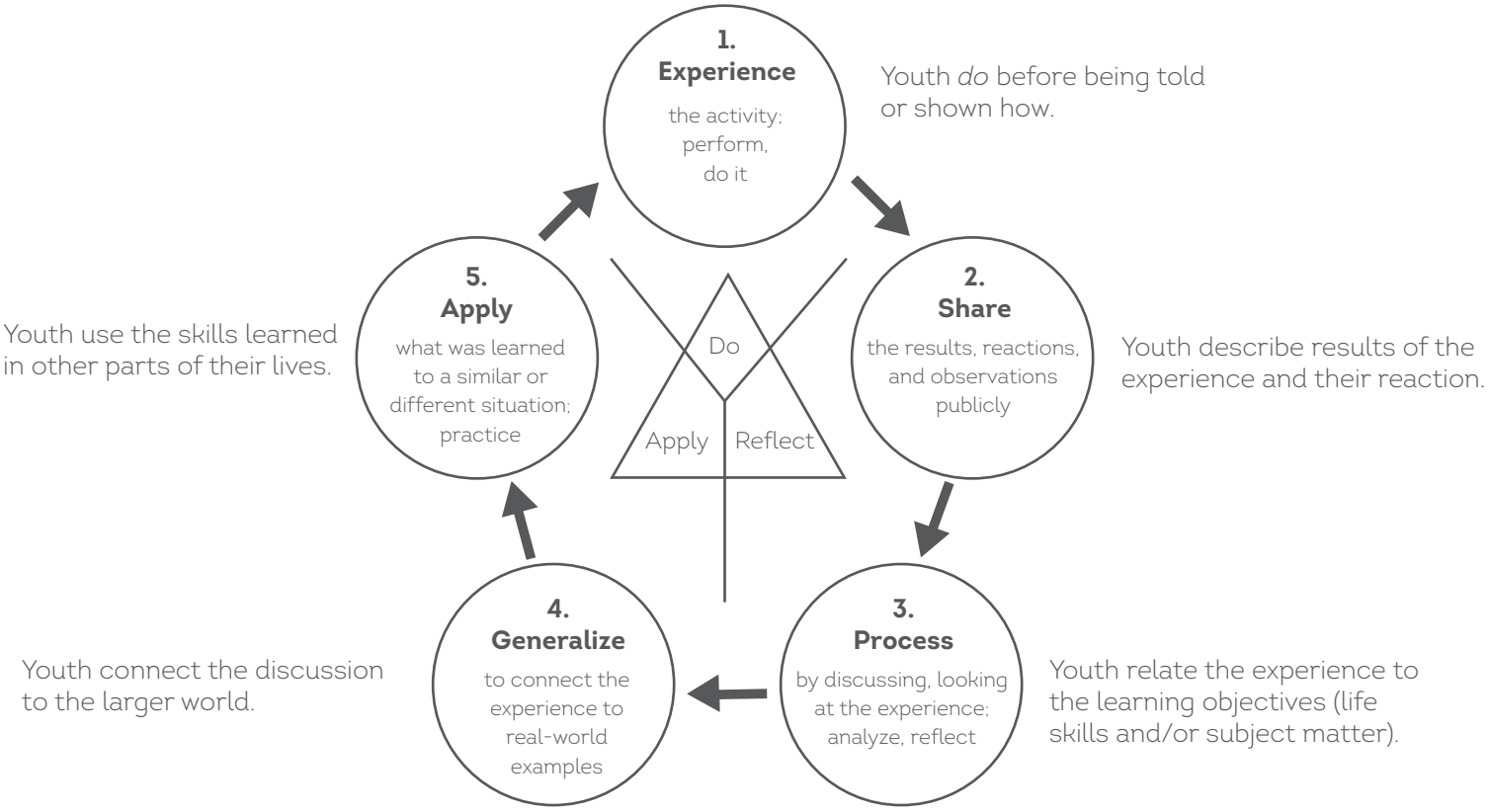
The essential elements are about healthy environments. Regardless of the project area, youth need to be in environments where the following elements are present in order to foster youth development.

1. **Belonging**: a positive relationship with a caring adult; an inclusive and safe environment.
2. **Mastery:** engagement in learning; opportunity for mastery.
3. **Independence:** opportunity to see oneself as an active participant in the future; opportunity to make choices.
4. **Generosity:** opportunity to value and practice service to others.

(Information retrieved from: http://www.4-h.org/resource-library/professional-development-learning/4-h-youth-development/youth-development/essential-elements/)

4-H "Learning by Doing" Learning Approach

The Do, Reflect, Apply learning approach allows youth to experience the learning process with minimal guidance from adults. This allows for discovery by youth that may not take place with exact instructions.



4-H Mission Mandates

The mission of 4-H is to provide meaningful opportunities for youth and adults to work together to create sustainable community change. This is accomplished within three primary content areas, or mission mandates, - citizenship, healthy living, and science. These mandates reiterate the founding purposes of Extension (e.g., community leadership, quality of life, and technology transfer) in the context of 21st century challenges and opportunities. (Information retrieved from: http://www.csrees.usda.gov/nea/family/res/pdfs/Mission_Mandates.pdf)

1. **Citizenship:** connecting youth to their community, community leaders, and their role in civic affairs. This may include: civic engagement, service, civic education, and leadership.
2. **Healthy Living:** promoting healthy living to youth and their families. This includes: nutrition, fitness, social-emotional health, injury prevention, and prevention of tobacco, alcohol, and other drug use.
3. **Science:** preparing youth for science, engineering, and technology education. The core areas include: animal science and agriculture, applied mathematics, consumer science, engineering, environmental science and natural resources, life science, and technology.

Getting Started

1. Recruit one to three other families to form a club with you.
    a. Send 4-H registration form and medical/photo release form to each family (available at utah4h.org)
    b. Distribute the Discover 4-H Clubs curriculum to each family
    c. Decide on a club name
    d. Choose how often your club will meet (e.g., monthly, bi-monthly, etc.)
2. Enroll as a 4-H volunteer at the local county Extension office (invite other parents to do the same)
3. Enroll your club at the local county Extension office
    a. Sign up to receive the county 4-H newsletter from your county Extension office to stay informed about 4-H-related opportunities.
4. Identify which family/adult leader will be in charge of the first club meeting.
    a. Set a date for your first club meeting and invite the other participants.
5. Hold the first club meeting (if this is a newly formed club).
    a. See *A Typical Club Meeting* section above for a general outline.
        i. Your activity for this first club meeting will be to elect club officers and to schedule the six project area club meetings outlined in the remainder of this guide. You may also complete a-d under #1 above.
    b. At the end of the first club meeting, make a calendar outlining the adult leader in charge (in partnership with the club president) of each club meeting along with the dates, locations, and times of the remaining club meetings.
6. Hold the six project-specific club meetings outlined in this guide.
7. Continue with the same project area with the 4-H curriculum of your choice (can be obtained from the County Extension Office) OR try another Discover 4-H Club project area.

Other Resources

Utah 4-H website: www.Utah4-h.org
National 4-H website: www.4-h.org
4-H volunteer training:
To set up login:
http://utah4h.org/htm/volunteers/get-involved/new-volunteer-training
To start modules: http://4h.wsu.edu/volunteertraining/course.html
(password = volunteer)

References

Information was taken from the Utah 4-H website (utah4h.org), the National 4-H Website (4h.org), the Utah Volunteer Handbook, or as otherwise noted.

Lerner, R., M. et al., (2005). Positive youth development, participation in community youth development programs, and community contributions of fifth grade adolescents: Findings from the first wave of the 4-H Study of Positive Youth Development. Journal of Early Adolescence, 25(1), 17-71.

We would love feedback or suggestions on this guide; please go to the following link to take a short survey:
http://tinyurl.com/lb9tnad

4-H CODE CLUB *Meetings*

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Utah State University Extension

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4-H Club Meeting 1
Welcome to Computer Science

Supplies

- Computer or tablet
- Internet access

In this first coding experience youth will learn the basic concepts of computer science with a simple "drag-and-drop" programming language that involves an Angry Birds and Plants vs. Zombies theme. The blocks for their programs will also be represented in JavaScript, the world's most widely adopted programming language. This is a game-like, self-directed tutorial that youth can complete in 1 hour or less on their own, or in pairs. Video lectures from Bill Gates (Microsoft) and Mark Zuckerberg (Facebook) are also included between puzzles. By completing all the puzzles, youth will have learned how to apply repeat-loops, conditionals, and basic algorithms.

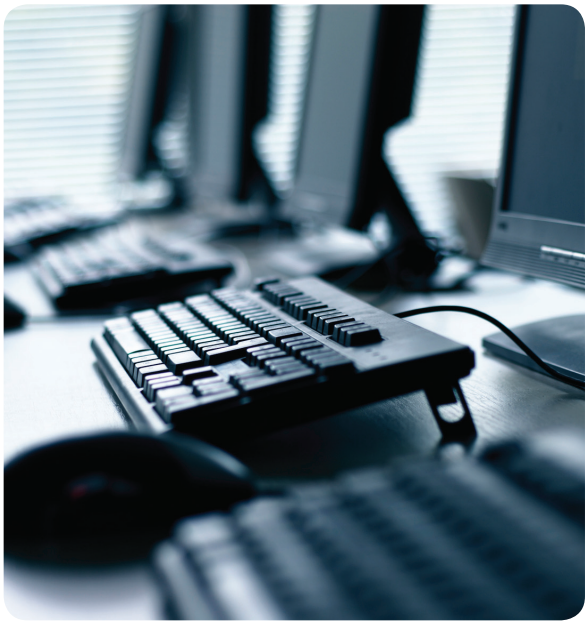
Getting Started

WHAT TO DO:

To get started follow these simple instructions:

1. Go to studio.code.org and click on "Intro Course."
2. Complete stages 1 and 2 by dragging blocks of code to get the Angry Bird or Zombie to its final destination.
3. Click on the "Run Program" button to see if your code works. If it's not quite right a prompt will be dis played to give you hints and additional instruction. To start a puzzle over, click the "Reset" button.
4. After each puzzle you solve correctly, a prompt will pop up to congratulate you. Before clicking the "Continue" button, click on the "Show Code" text to review the blocks you have organized represented in JavaScript.
5. Click the "Need Help?" text on the left margin to watch videos and get hints for completing the puzzle successfully.

Notes for understanding the drag-and-drop programming language can be found here: http://tinyurl.com/ovdvwls



Reflect

- What were the problems you encountered when learning to code for the first time?
- How did you solve these problems and complete the puzzles successfully?
- Did your code always work perfectly the first time? If not, what did you do to make it work?
- What is a repeat-loop? Conditional? Algorithm?

Apply

- When have you used instructions at home to complete a task?
- When have you had to solve a problem at home? At school?
- When will giving instructions be useful to you in the future?
- Why is it important to be able to give clear instructions?
- What if a pilot didn't have pre-flight instructions?

Debriefing

Troubleshooting is defined as: solving a problem by tracing back, identifying, and correcting faults within a mechanical or electronic system. Let club members know that this is part of being a software engineer. Not everything works perfectly the first time. In fact, with computer programming it can often take several attempts by trial and error to get a program to run correctly so the computer does what you want it to do. Computers are only as good as their programmers. Trial and error are part of the process. Instruct the youth to keep a record of their code on file so they can reference and recycle it in future programs. Allow time for review and questions.

References

K-8 Intro to Computer Science Course (2013). Retrieved from http://learn.code.org

4-H *Club Meeting 2*
Computational Thinking and Algorithms

Supplies

- Computer or tablet
- Internet access

In this first coding experience youth will learn the basic concepts of computer science with a simple "drag-and-drop" programming language that involves an Angry Birds and Plants vs. Zombies theme. The blocks for their programs will also be represented in JavaScript, the world's most widely adopted programming language. This is a game-like, self-directed tutorial that youth can complete in 1 hour or less on their own, or in pairs. Video lectures from Bill Gates (Microsoft) and Mark Zuckerberg (Facebook) are also included between puzzles. By completing all the puzzles, youth will have learned how to apply repeat-loops, conditionals, and basic algorithms.

Getting *Started*

WHAT TO DO:

To get started follow these simple instructions: Stages 3-7 studio.code.org/s/20-hour

1. Go to studio.code.org and click on "Intro Course."
2. Complete the stage 3 and 4 unplugged activities and the modules in stages 5-7.
3. Click on the "Run Program" button to see if your code works. If it's not quite right a prompt will be displayed to give you hints and additional instruction. To start a puzzle over, click the "Reset" button.
4. After each puzzle you solve correctly, a prompt will pop up to congratulate you. Before clicking the "Continue" button, click on the "Show Code" text to review the blocks you have organized represented in JavaScript.
5. Click the "Need Help?" text on the left margin to watch videos and get hints for completing the puzzle successfully.

Notes for understanding the drag-and-drop programming language can be found here: http://tinyurl.com/ovdvwls.

Reflect

- What were the problems you encountered when learning to code for the first time?
- How did you solve these problems and complete the puzzles successfully?
- Did your code always work perfectly the first time? If not, what did you do to make it work?
- What is a repeat-loop? Conditional? Algorithm?

Apply

- When have you used instructions at home to complete a task?
- When have you had to solve a problem at home? At school?
- When will giving instructions be useful to you in the future?
- Why is it important to be able to give clear instructions?
- What if you didn't have cooking instructions to make Thanksgiving dinner?

Debriefing

Troubleshooting is defined as: solving a problem by tracing back, identifying, and correcting faults within a mechanical or electronic system. Let club members know that this is part of being a software engineer. Not everything works perfectly the first time. In fact, with computer programming it can often take several attempts by trial and error to get a program to run correctly so the computer does what you want it to do. Computers are only as good as their programmers. Trial and error are part of the process. Instruct the youth to keep a record of their code on file so they can reference and recycle it in future programs. Allow time for review and questions.

References

K-8 Intro to Computer Science Course (2013). Retrieved from http://learn.code.org

4-H Club Meeting 3
Functions and Conditionals

Supplies

- Computer or tablet
- Internet access

In this first coding experience youth will learn the basic concepts of computer science with a simple "drag-and-drop" programming language that involves an Angry Birds and Plants vs. Zombies theme. The blocks for their programs will also be represented in JavaScript, the world's most widely adopted programming language. This is a game-like, self-directed tutorial that youth can complete in 1 hour or less on their own, or in pairs. Video lectures from Bill Gates (Microsoft) and Mark Zuckerberg (Facebook) are also included between puzzles. By completing all the puzzles, youth will have learned how to apply repeat-loops, conditionals, and basic algorithms.

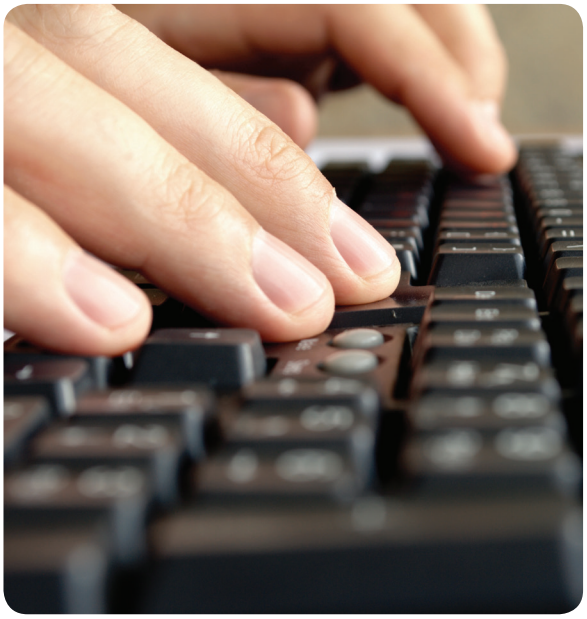
Getting Started

WHAT TO DO:

To get started follow these simple instructions: Stages 8-11 studio.code.org/s/20-hour

1. Go to studio.code.org and click on "Intro Course."
2. Complete stages 8-11. Stage 8 and 10 are unplugged activities and 9 and 11 are modules.
3. Click on the "Run Program" button to see if your code works. If it's not quite right a prompt will be dis played to give you hints and additional instruction. To start a puzzle over, click the "Reset" button.
4. After each puzzle you solve correctly, a prompt will pop up to congratulate you. Before clicking the "Continue" button, click on the "Show Code" text to review the blocks you have organized represented in JavaScript.
5. Click the "Need Help?" text on the left margin to watch videos and get hints for completing the puzzle successfully.

Notes for understanding the drag-and-drop programming language can be found here: http://tinyurl.com/ovdvwls.



Reflect

- What were the problems you encountered when learning to code for the first time?
- How did you solve these problems and complete the puzzles successfully?
- Did your code always work perfectly the first time? If not, what did you do to make it work?
- What is a repeat-loop? Conditional? Algorithm?

Apply

- When have you used instructions at home to complete a task?
- When have you had to solve a problem at home? At school?
- When will giving instructions be useful to you in the future?
- Why is it important to be able to give clear instructions?
- What if a building contractor didn't have blueprints?

Debriefing

Troubleshooting is defined as: solving a problem by tracing back, identifying, and correcting faults within a mechanical or electronic system. Let club members know that this is part of being a software engineer. Not everything works perfectly the first time. In fact, with computer programming it can often take several attempts by trial and error to get a program to run correctly so the computer does what you want it to do. Computers are only as good as their programmers. Trial and error are part of the process. Instruct the youth to keep a record of their code on file so they can reference and recycle it in future programs. Allow time for review and questions.

References

K-8 Intro to Computer Science Course (2013). Retrieved from http://learn.code.org

4-H Club Meeting 4
Functions and Parameters

Supplies

- Printouts of Old MacDonald (included)
- Computer or tablet
- Internet access

Today's club meeting includes three activities that will help the youth understand the use of functions, function calls, and parameters in computer coding.

Activity #1

UNPLUGGED-CHORUS

Be aware that all of the youth may not be familiar with the song in this activity. The leader should be prepared to teach them the tune.

1. Copy the lyrics of Old MacDonald from the meeting printout onto a poster, whiteboard, or chalkboard.
2. Define the chorus by going over it with the group.
3. Hand out the printouts.
4. Invite the youth to sing through the song.
5. Ask if they can add more verses to the song (e.g., dog (bark, bark), cat (meow, meow), etc.)
6. Go to this meeting's Reflection section and ask the first four questions before continuing to Activity 2.

Activity #2

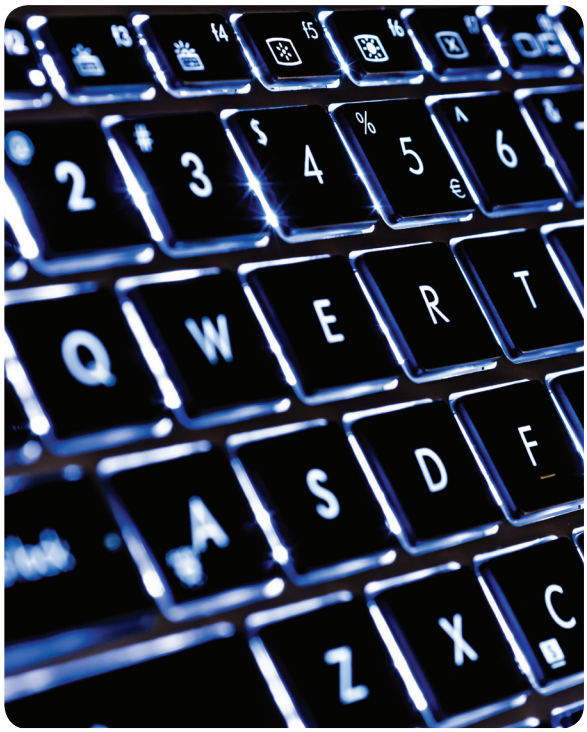
THE FARMER

1. Go to studio.code.org/s/20-hour.
2. Complete all of stages 12-15.
3. Click on the "Run Program" button to see if your code works. If it's not quite right a prompt will be dis played to give you hints and additional instruction. To start a puzzle over, click the "Reset" button.
4. After each puzzle you solve correctly, a prompt will pop up to congratulate you. Before clicking the "Continue" button, click on the "Show Code" text to review the blocks you have organized represented in JavaScript.
5. If available, watch the videos below the "Need Help?" text on the left margin to get hints for completing the puzzle successfully.

Activity #3

THE ARTIST

1. Go to studio.code.org/s/20-hour.
2. Complete all of stages 16 and 17.
3. Click on the "Run Program" button to see if your code works. If it's not quite right a prompt will be dis played to give you hints and additional instruction. To start a puzzle over, click the "Reset" button.
4. After each puzzle you solve correctly, a prompt will pop up to congratulate you. Before clicking the "Continue" button, click on the "Show Code" text to review the blocks you have organized represented in JavaScript.
5. If available, watch the videos below the "Need Help?" text on the left margin to get hints for completing the puzzle successfully.



Reflect

- Why don't we sing the word "Chorus" like the song is written?
- How did you know you were supposed to change animal sounds in the different verses?
- How is a chorus like a function?
- How can a chorus have "parameters"?
- What is a function?
- What does it mean to call a function?
- What is a parameter?
- Did your code always work perfectly the first time? If not, what did you do to make it work?

Apply

- When have you used instructions at home to complete a task?
- Why is it important to understand the details (parameters) of instructions?
- What are some parameters you use for everyday tasks (think back to the hamburger and drink example from Janete's video)?

References

K-8 Intro to Computer Science Course (2013). Retrieved from http://learn.code.org

K-8 Intro to Computer Science Course: Song Writing Lesson (2013). Retrieved from http://studio.code.org/unplugged/unplug7.pdf

CHORUS (sound):

With a sound sound here
And a sound sound there
Here a sound, there a sound
Everywhere a sound sound
Old MacDonald had a farm E-I-E-I-O

SONG:

Old MACDONALD had a farm E-I-E-I-O
And on his farm he had a sheep E-I-E-I-O

CHORUS ("Baa")

Old MACDONALD had a farm E-I-E-I-O
And on his farm he had a cow E-I-E-I-O

CHORUS ("Moo")

Old MACDONALD had a farm E-I-E-I-O
And on his farm he had a horse E-I-E-I-O

CHORUS ("Neigh")

4-H Club Meeting 5
Debugging

Supplies

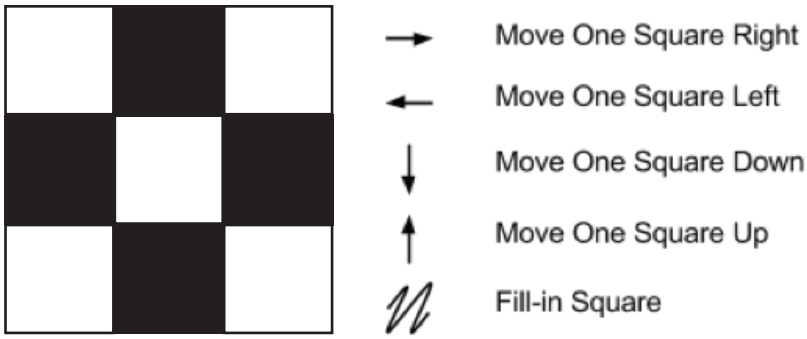
- Sample graph paper drawings and blank graph paper boxes (Algorithm Kits)
- Lined paper
- Pencils
- Computer or tablet
- Internet access

An important aspect of computer programming is troubleshooting and debugging. During this meeting the youth will review basic algorithms and programming. Then they will work as teams and individuals (or partners) to find and correct bugs in existing code.

Activity #1

UNPLUGGED-GRAPH PAPER PROGRAMMING

1. Draw the following image and programming key on a poster, whiteboard, or chalkboard.



2. Ask the youth to write an algorithm (or instructions) for drawing this image.
3. Go through some of their algorithms to see if they work.
4. Now write this sample algorithm on the poster, whiteboard, or chalkboard.

   "Move right, fill-in, move right, move down,
   move left, move left,
   fill-in, move right, move right, fill-in, move down,
   move left, move left,
   move right, fill-in, move right"
5. Ask the youth to write a program or code for the algorithm using the programming key.
6. Go through some of their programs to see if they work.
7. Divide the group into six teams.
8. Give each team a 5x5 graph paper drawing, blank graph paper, and lined paper.
9. Instruct each team to write the algorithm and program for their image on the lined paper.
10. Tell them to exchange their lined paper with another group.
11. Tell each group to "run" the other team's program and use their blank graph paper to fill in the image.
12. Compare each team's drawing with the original.

Activity #2

UNPLUGGED-RELAY PROGRAMMING

1. Divide the youth into teams of 4-6 people (for smaller clubs, divide into two teams).
2. On one side of a large room (or yard) have a station with a 6x6 graph paper drawing, a piece of paper, and pencil for each team.
3. Line up each team on the opposite side of the room or yard.
4. Explain the following rules to the youth:
    a. One person from each team must hurry to the station.
    b. That person must write the first programming symbol for the graph paper drawing.
    c. They then must hurry back and tag the next person on their team.
    d. The next person will go to the station and review the teammate's work.
    e. If it is correct, they will add another symbol. If they find an error, then they will only correct the error.
    f. They will then hurry and tag their next teammate who will review and edit or add the next.
    g. This continues until a team completes their graph paper drawing programming.
    h. The leader will then test their program to check for accuracy.
5. Have the youth compete in the relay.

Activity #3

DEBUGGING THE FARM

1. Go to studio.code.org/s/20-hour.
2. Complete stages 18-20.
3. Click on the "Run Program" button to see if your debugged code works. If it's not quite right, a prompt will be displayed to give you hints and additional instruction. To start a puzzle over, click the "Reset" button.
4. After each puzzle you solve correctly, a prompt will pop up to congratulate you. Before clicking the "Continue" button, click on the "Show Code" text to review the blocks you have organized represented in JavaScript.
5. If available, watch the videos below the "Need Help?" text on the left margin to get hints for completing the puzzle successfully.

Reflect

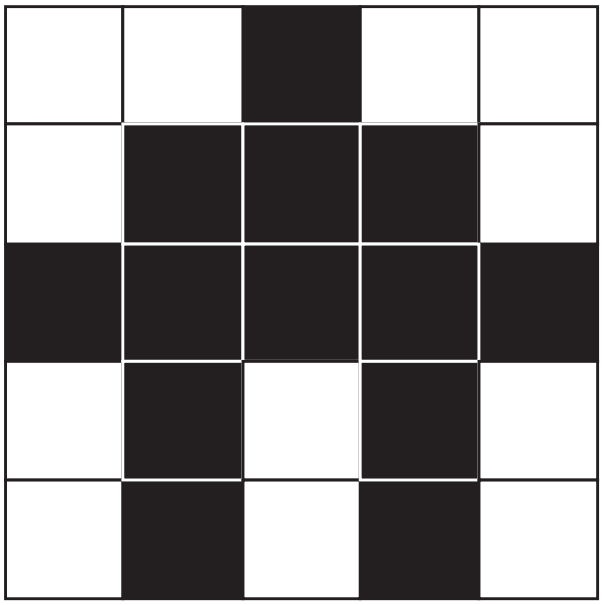
- Why do you think computer programmers use programs and code instead of typing out verbal algorithms?
- Can you think of some functions that you could use with your graph paper programs?
- Was it easier or harder to have several people working on a program at different times?
- Are there any tricks you found that could help your teammates be faster?
- What are some of the challenges of debugging code written by another person?
- How did you solve these problems and complete the puzzles successfully?
- Did your code always work perfectly the first time? If not, what did you do to make it work?

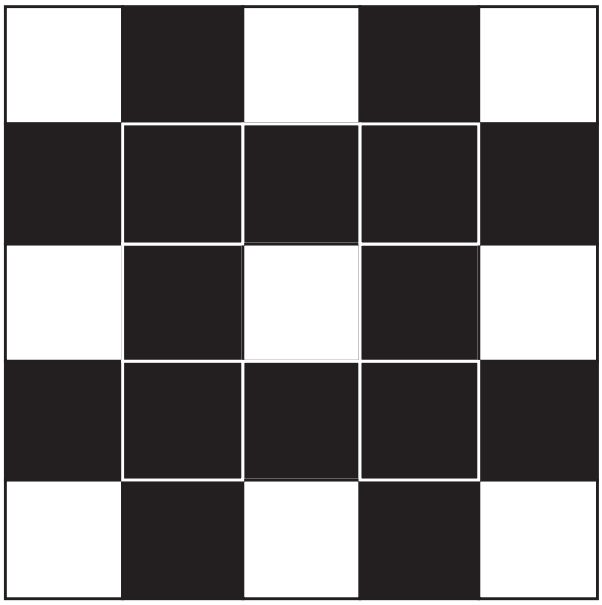
Apply

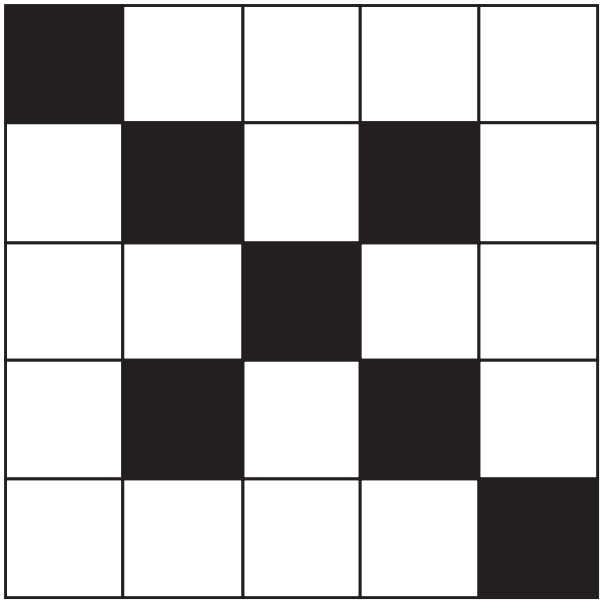
- Why are symbols useful? Can you think of some examples of useful symbols that you see everyday?
- How can working as a team make it easier to make errors?
- How can working as a team make it easier to avoid errors?
- Why is it important to check our work before turning in a school assignment?
- What are some of the advantages of having another person look over your work?

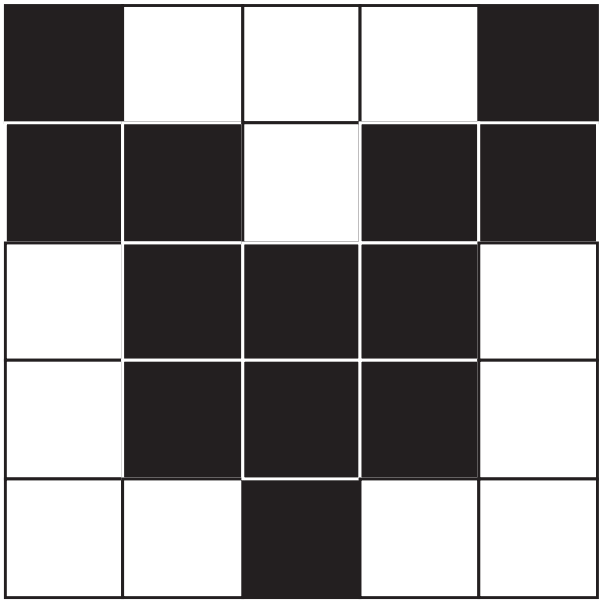
References

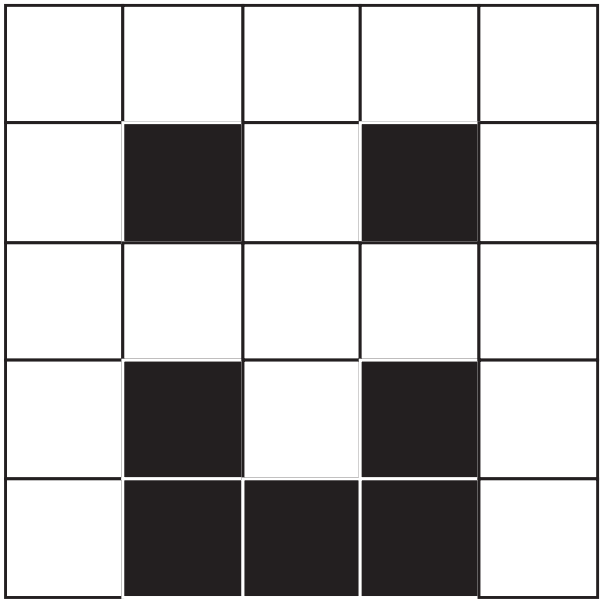
K-8 Intro to Computer Science Course (2013). Retrieved from http://learn.code.org

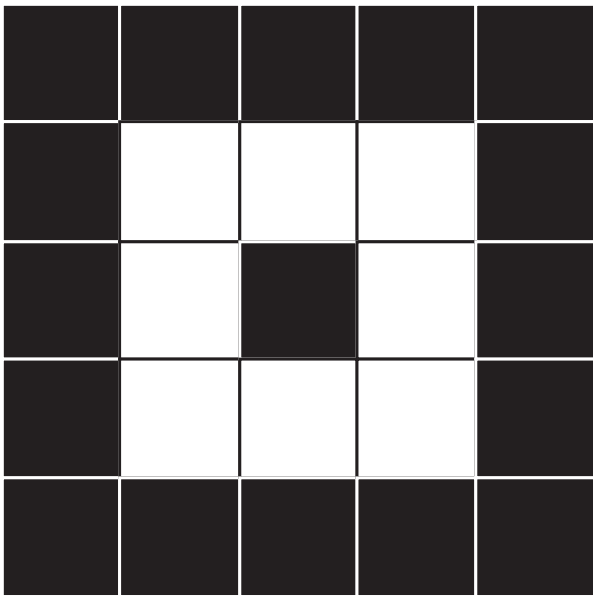


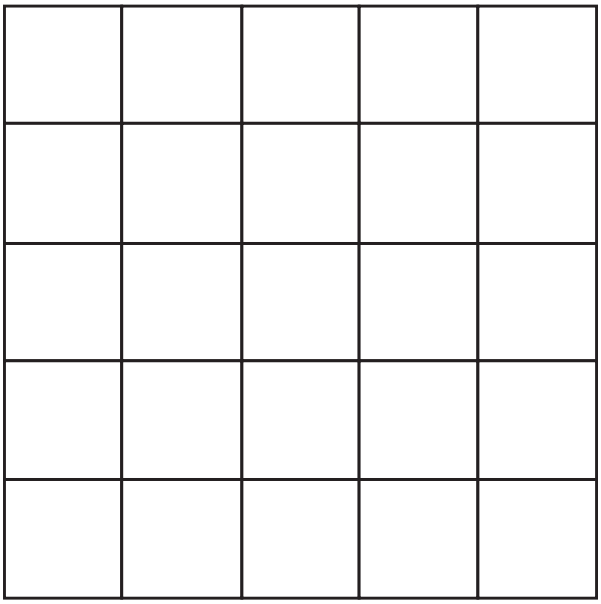


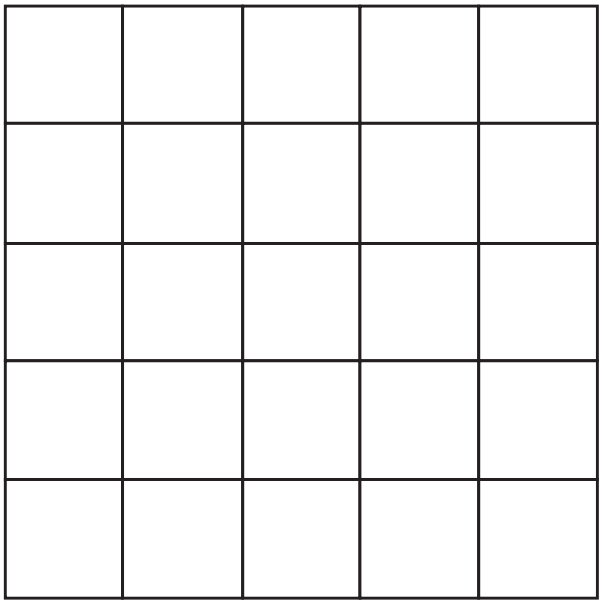


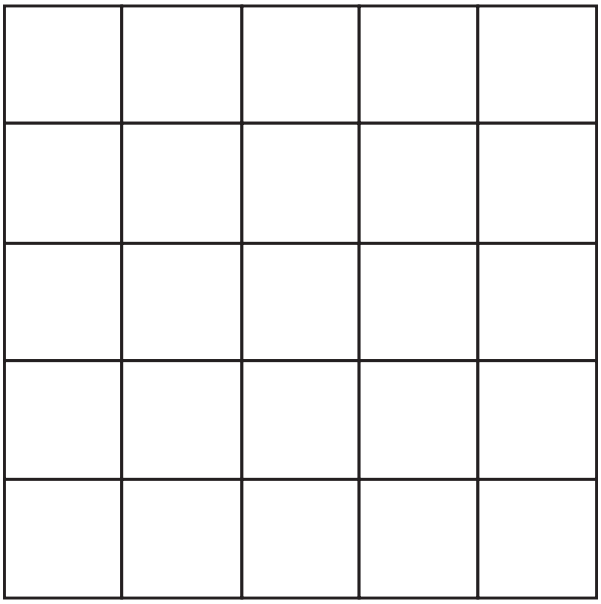


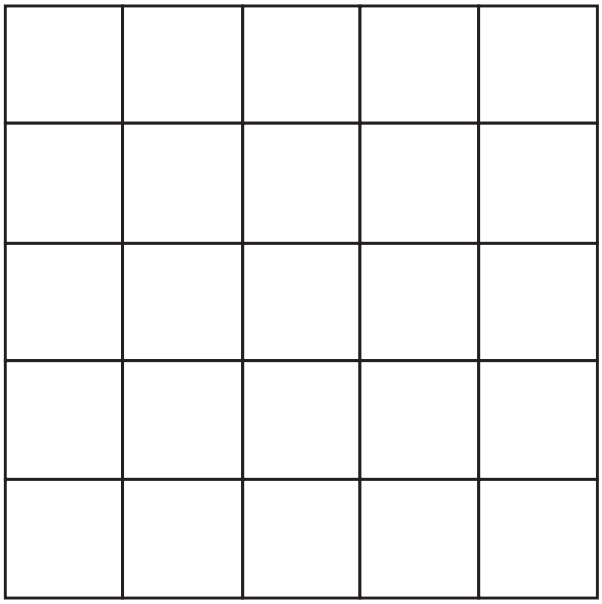


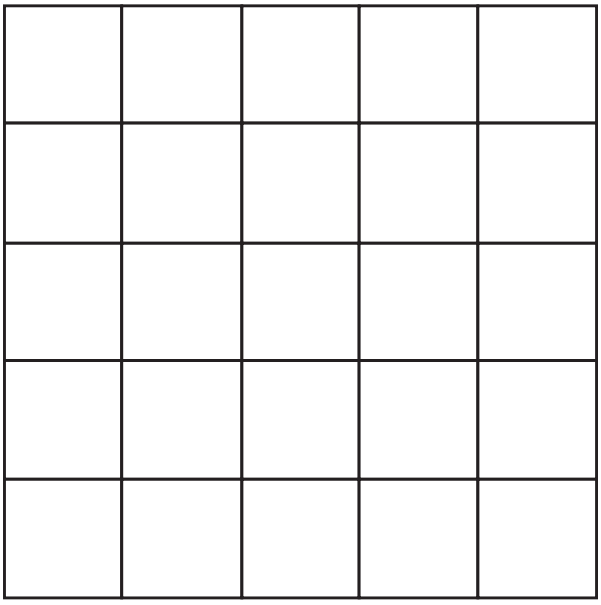


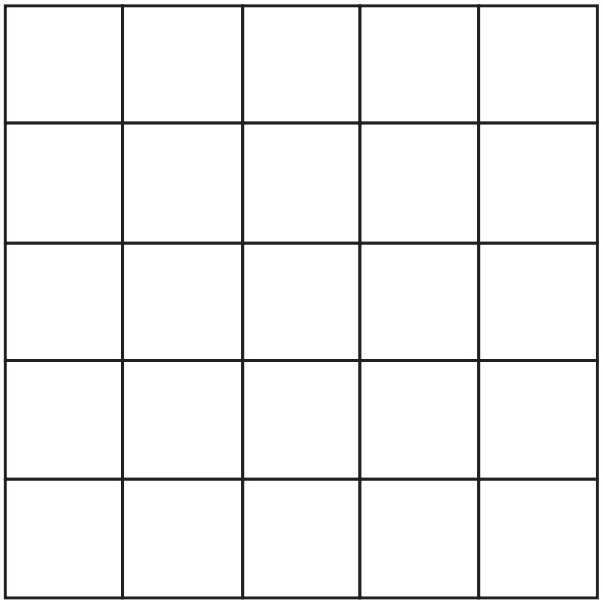


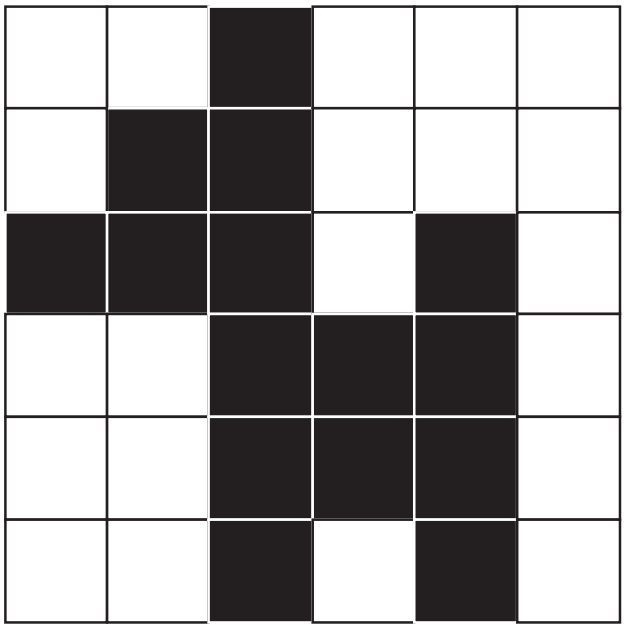


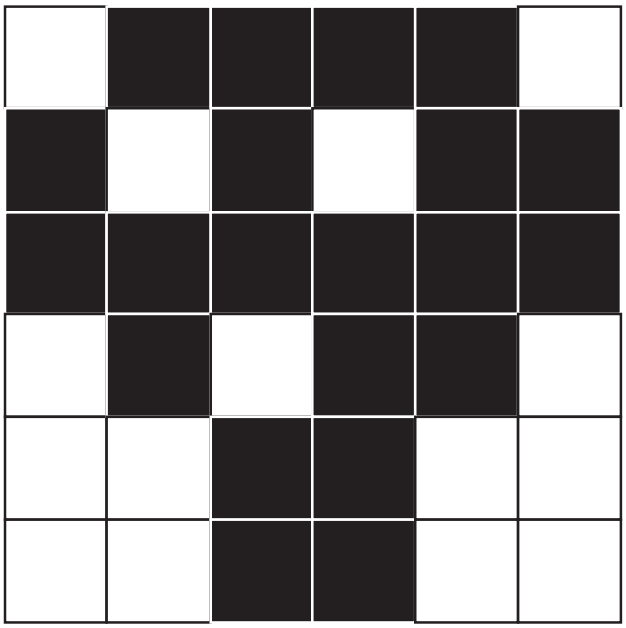


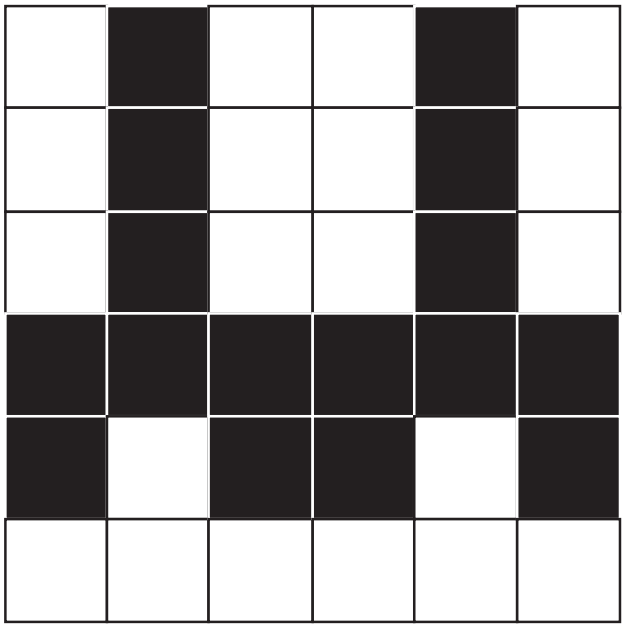


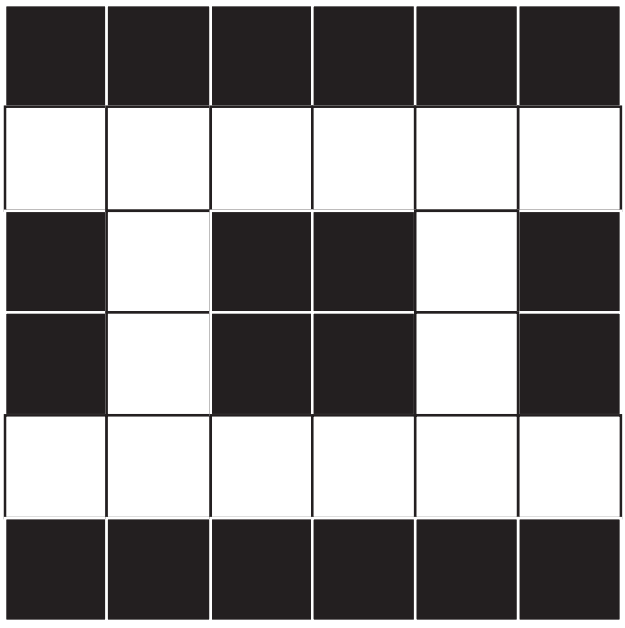


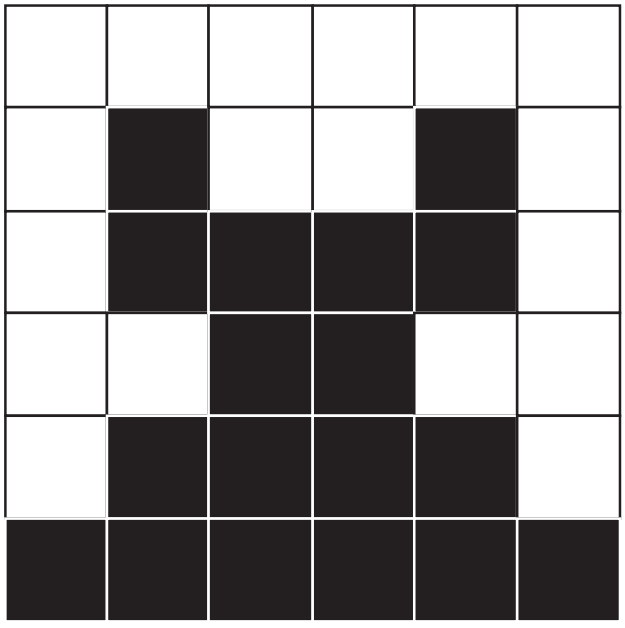


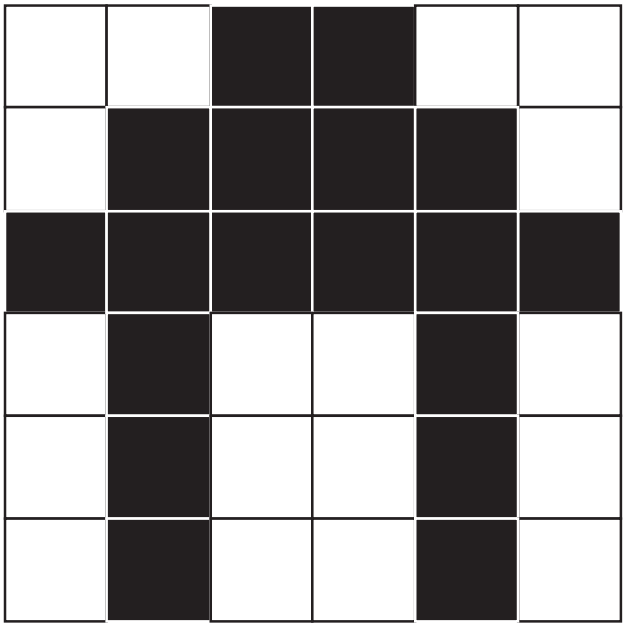


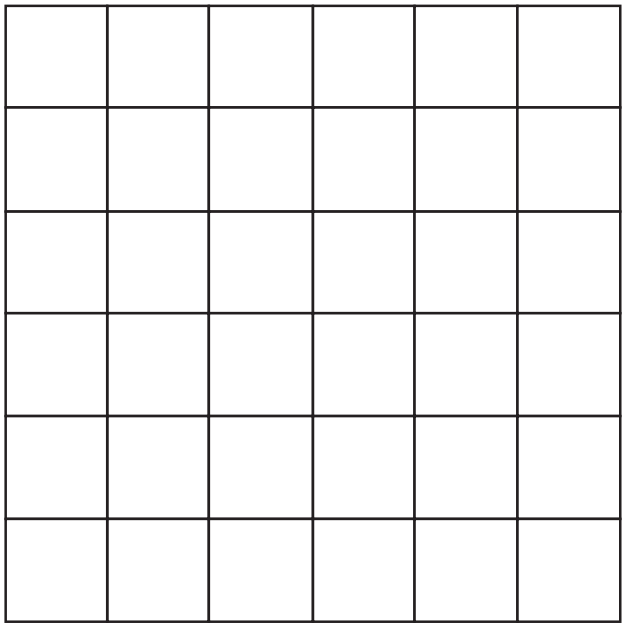


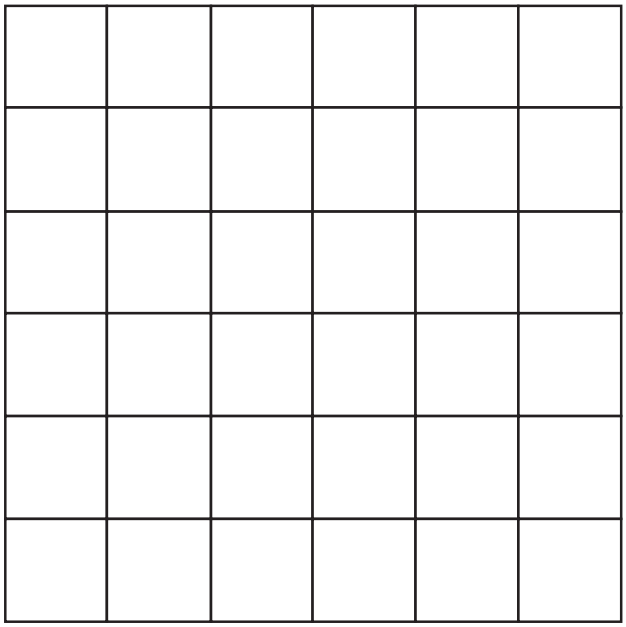


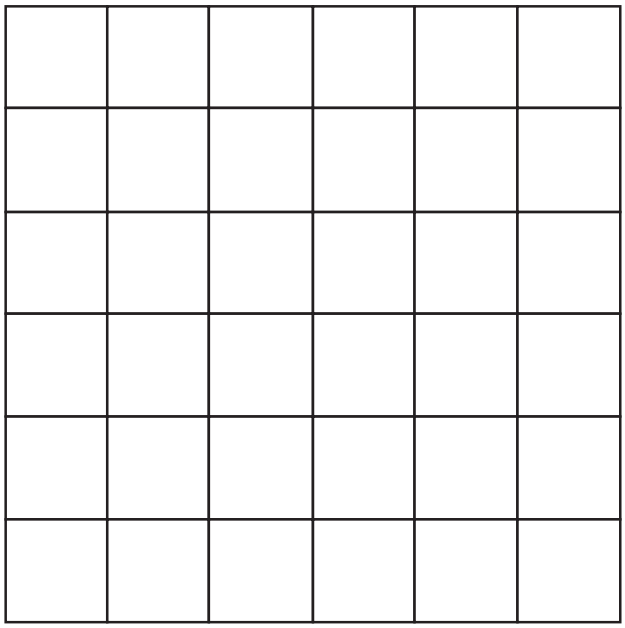


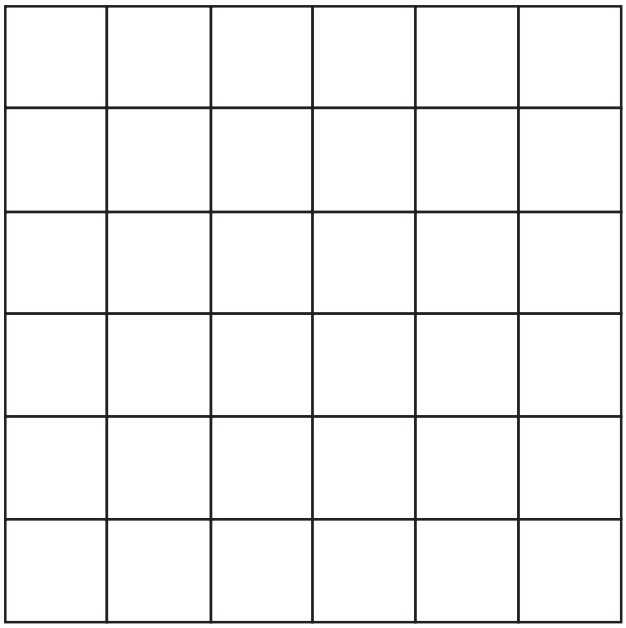


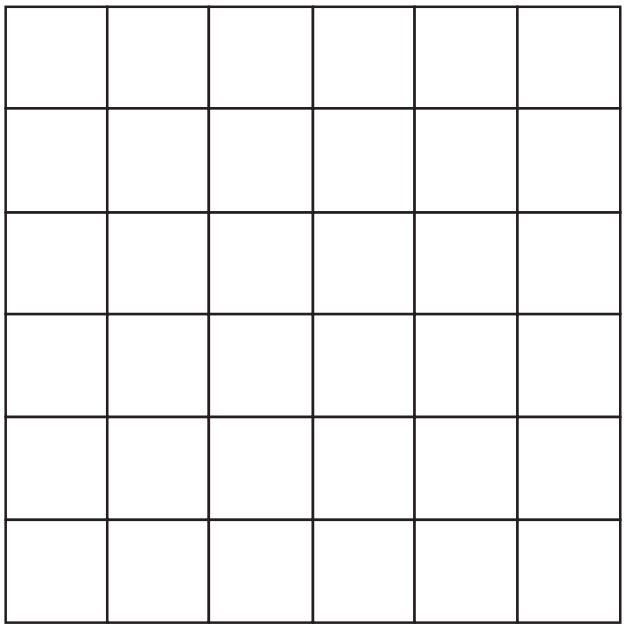


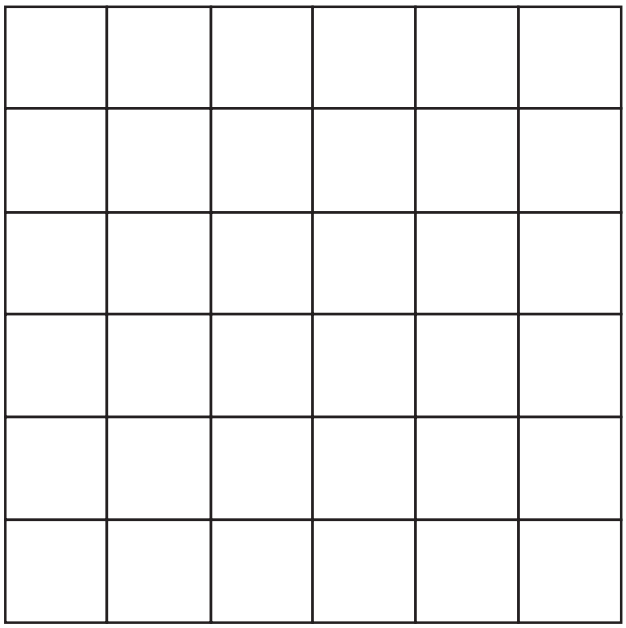












4-H Club Meeting 6
Free Play and Review

Supplies

- Computers or tablets (at least one for every two club participants).
- Internet access.
- Various household/craft items that can inspire creative unplugged activities
  - e.g., aluminum foil, markers, beads, yarn, pipe cleaner, fake money, paper, LED lights, etc.

Today the youth will incorporate various coding functions to create works of art. Then they will review all the computer science principles from previous meetings and work as teams to create original unplugged games!

Activity #1

THE ARTIST FREE PLAY

To get started follow these simple instructions:

1. Go to studio.code.org/flappy/1.
2. Create your own version of Flappy Bird.
3. Run that code first by clicking on the "Run" program button.
4. Click on the "Show Code" text to compare and contrast the code represented in JavaScript.
5. Click on the "Run Program" button to see if your code works. To start a puzzle over, click the "Reset" button.
6. After each puzzle you solve correctly, a prompt will pop up to congratulate you. Before clicking the "Continue" button, click on the "Show Code" text to review the blocks you have organized represented in JavaScript.
7. At the end of free play invite the youth to have an art show of their favorite codes.

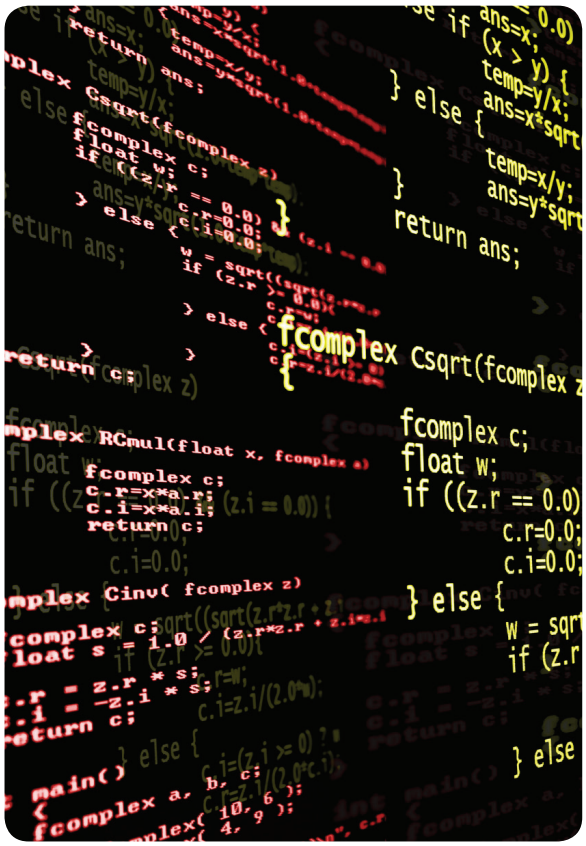
Activity #2

DESIGN ORIGINAL UNPLUGGED GAMES

1. Select teams of 2-5 youth.
2. Divide the previous activities among each team.
   a. Meeting One
      i. The Maze: Repeat-loops, Conditionals, If-Statements, and Basic Algorithms.
   b. Meeting Two
      i. The Maze: Repeat-loops, Conditionals, If-Statements, and Basic Algorithms.

c. Meeting Three
    i. The Maze: Repeat-loops, Conditionals, If-Statements, and Basic Algorithms.
d. Meeting Four:
    i. Chorus: Functions & Parameters
    ii. The Farmer: Functions
    iii. The Artist: Functions & Parameters
e. Meeting Five
    i. Graph Paper Programming: Basic Algorithms
    ii. Relay Programming: Debugging
    iii. The Farmer: Debugging & Importance of Order

3. Challenge each team to design an unplugged game that incorporates skills from their assigned lessons. Allow them to use all of the household/craft supply materials that you've collected.
4. Let them go for it!
5. After you regroup, give each group a few minutes to describe their unplugged game.



Reflect

- What challenges did you face as you designed your own artwork with code?
- Trial and error is an important part of coding. What did you do when you created a faulty code?
- Which function did you use the most to create your artwork?
- Which function is your favorite and why?
- Did you find it difficult to make up your own unplugged game? Why or why not?
- What were some creative ways you used one of the supplies?

Apply

- Sometimes you may make mistakes or get a bad grade in school. What should you do when that happens?
- Give an example of a time when you may need to work through a problem using trial and error?
- If you could design any video or computer game, what would you design?
- What code commands would you need to use for your game?
- How can understanding computer programming help you in the future?

Debriefing

Make sure the youth experiment with code designs in the Artist activity and don't just go through the existing codes. Allow time for questions and reflection.

You can base future club meetings off the original unplugged games designs from Activity 3. One club meeting may focus on further idea development and another can be for testing out the games. Some additional resources can be found at http://code.org/learn/beyond.

References

K-8 Intro to Computer Science Course. (2013) Retrieved from http://learn.code.org

More to Discover

Congratulations on completing your Discover 4-H club meetings! Continue with additional curriculum in your current project area, or discover other 4-H project areas. Check out the following links for additional 4-H curriculum.

1. http://utah4h.org/htm/discover4hclubs
2. http://www.4-h.org/resource-library/curriculum/
3. http://utah4h.org/htm/resource-library/view-all-curriculum

Become a 4-H Member or Volunteer

To **register** your Utah club or individuals in your club visit:

http://www.utah-4.org/htm/staff-resources/4-h-online-support

http://utah4h.org/htm/about-4-h/newto4h/

Non-Utah residents please contact your local 4-H office:

http://www.4-h.org/get-involved/find-4-h-clubs-camps-programs/

Stay Connected

Visit Your County Extension Office

Stay connected with 4-H activities and news through your county Extension office. Ask about volunteer opportunities and don't forget to register for your county newsletter. Find contact information for counties in Utah here:

http://extension.usu.edu/htm/counties

Enjoy the Fair!

Enter your project or create a new project for the county fair. Learn about your county fair and fair judging here:

http://utah4h.org/htm/events-registration/county-fairs

Participate in Local or State 4-H Activities, Programs, Contests or Camps

For Utah state events and programs visit:

http://utah4h.org/htm/events-registration

http://www.utah4h.org/htm/featured-programs

For local Utah 4-H events and programs, visit your county Extension office.

http://extension.usu.edu/htm/counties

Non-Utah residents, please contact your local 4-H office.

http://www.4-h.org/get-involved/find-4-h-clubs-camps-programs/

Discover *Service*

Become a 4-H Volunteer!

http://www.youtube.com/watch?v=UBemO5VSyK0

http://www.youtube.com/watch?v=U8n4o9gHvAA

To become a 4-H volunteer in Utah, visit us at:

http://utah4h.org/htm/about-4-h/newto4h/

Serve Together as a 4-H Club or as an Individual 4-H Member

Use your skills, passions, and 4-H to better your community and world. You are needed! Look for opportunities to help in your area or participate in service programs that reach places throughout the world (religious groups, Red Cross, etc.).

Hold a Club Service Project

USU Collegiate 4-H Club hosted "The Gift of Giving" as a club activity. Club members assembled Christmas stockings filled with needed items for CAPSA (Community Abuse Prevention Services Agency).

http://tinyurl.com/lu5n2nc

Donate 4-H Projects

Look for hospitals, nursing homes, or other nonprofit organizations that will benefit from 4-H projects. Such projects include making quilts for CAPSA or Primary Children's Hospital, or making beanies for newborns. During Utah 4-H State Contests, 40 "smile bags" were sewn and donated to Operation Smile.

Partner with Local Businesses

92,000 pounds of processed lamb, beef, and pork were donated to the Utah Food Bank in 2013 by multiple companies.

http://tinyurl.com/pu7lxyw

Donate Money

Clubs or individuals can donate money gained from a 4-H project to a worthy cause. A nine-year-old 4-H member from Davis County donated her project money to help a three-year-old battle cancer.

http://tinyurl.com/mqtfwxo

Give Us Your *Feedback*

Help us improve Discover 4-H curriculum. We would love feedback or suggestions on this guide; please go to the following link to take a short survey:

http://tinyurl.com/lb9tnad