Limudei Code-Esh: Pesach

An Advanced ScratchJr Coding Curriculum
Integrated with Jewish Education

Using the Coding as Literacy (CAL) approach developed by
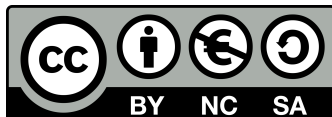
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Our goal in creating Limudei Code-Esh is to provide an easily accessible coding curriculum that would integrate key themes of Jewish holidays and be appropriate for use in all Jewish day or supplementary school settings. It is our hope that the units of study will complement instruction and inspire a love of Jewish holiday celebration as well as computer science in elementary school age children.

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INTRODUCTION

LESSONS

Introduction

CODING AS LITERACY (CAL) APPROACH

This curriculum introduces powerful ideas from computer science, specifically programming with ScratchJr, to children in Kindergarten through 3rd grade in a structured, developmentally appropriate way in the context of Jewish education. The Coding as Literacy (CAL) approach, developed by Prof. Marina Umaschi Bers and members of her DevTech Research Group at Tufts University, understands the learning of computer science as a literacy for the 21st century computer science ideas into direct conversation with powerful ideas from literacy. Both can support learners in developing new ways of thinking about themselves and the world.

Thinking involves the ability to make sense of, interpret, represent, model, predict, and invent our experiences in the world. Thus, as educators, we must give children one of the most powerful tools for thinking: language. The term language refers here to a system of communication, natural or artificial, composed of a formal limited system of signs, governed by syntactic and grammatical combinatory rules, that serves to communicate meaning by encoding and decoding information. Today, we have the opportunity to not only teach children how to think by using natural languages, such as English or Hebrew, but also by learning artificial languages—programming languages such as ScratchJr.

The achievement of literacy in a natural language involves a progression of skills beginning with the ability to understand spoken words, followed by the capacity to code and decode written words, and culminating in the deep understanding, interpretation, and production of text. The ultimate goal of literacy is not only for children to master the syntax and grammar, the orthography and morphology, but also the semantics and pragmatics, the meanings and uses of words, sentences and genres. A literate person knows that reading and writing are tools for meaning making and, ultimately, tools of power because they support new ways of thinking.

The CAL approach proposes that programming, as a literacy of the 21st century, engages new ways of thinking and new ways of communicating and expressing ideas, as well as new ways of problem solving and working with others. CAL understands the process of coding as a semiotic act, a meaning making activity that engages children in both developing computational thinking, as well as promoting personal expression, communication, and interpretation. This understanding shapes this curriculum and our strategies for teaching coding.

The curriculum is organized around powerful ideas from both computer science and Jewish studies, as well as fundamental ideas from literacy. The term **powerful idea** refers to a central concept or skills within a discipline that is simultaneously personally useful, inherently interconnected with other disciplines, and has roots in intuitive knowledge that a child has internalized over a long period of time. Powerful Ideas from the core domains of Computer Science, Pesach, and Literacy are represented throughout this curriculum, and are described below.

Computer Science Powerful Ideas

This is designed as a beginner's curriculum for children who do not have previous experience with ScratchJr. The **powerful ideas from computer science** addressed in this curriculum include: algorithms, design process, representation, debugging, control structures, modularity, and hardware/software (see Table 1).

Table 1: Computer Science Powerful Ideas

Powerful Ideas	Definition	Relevant Lessons
Algorithms	A series of ordered steps taken in a sequence to solve a problem or achieve an end goal; a program	Lessons 1, 3, 9, 12, 13, 17, 18, 19, 20
Modularity	Breaking down tasks or procedures into simpler, manageable units that can be combined to create a more complex process	Lessons 2, 9, 10, 12, 13, 17, 19, 20
Control Structures	These structures determine the order or sequence in which instructions are followed within an algorithm or program	Lessons 7, 9, 10, 15, 18, 19, 20
Representation	The idea that symbol systems can represent specific ideas or concepts	Lessons 1, 4, 7, 8, 11, 19, 20
Hardware/Software	Hardware is physical machinery, like a computer. Software is intangible instructions that control the hardware. Hardware and software work together as a system to accomplish tasks of sending, processing, and receiving information	Lessons 3, 6, 19, 20
Design Process	An iterative process used to develop programs and tangible artifacts that involve the following steps: Ask, Imagine, Plan, Create, Test & Improve, Create, Share	Lessons 4, 5, 7, 8, 12, 14, 15, 16, 19, 20
Debugging	A strategy for iterating and repairing issues in a program of designed artifact	Lessons 5, 8, 19., 20

Table 2: Pesach Powerful Ideas

Powerful Ideas	Definition	Relevant Lessons
Chametz/Matzah	There are foods that Jews are not able to eat on Pesach, such as Chametz. Azkenazic and Sephardic Jews have unique Pesach traditions around food.	Lessons 1-5
Freedom vs. Slavery	Pesach customs are focused on remembering when our ancestors were enslaved and thanking G-d for our freedom from slavery.	Lessons 6-9
The Number Four in the Haggadah	During the Haggadah (the story of Pesach), the number four holds special symbolic significance. We remember this through seder customs (e.g. the Four Questions, the Four Sons and Four Cups of Wine)	Lessons 10-13
The Four Children and Us	The Four Children remind us to reflect about the purpose of Pesach and retelling the story. They remind us to thank G-d for what He has generously done for us.	Lessons 14-16
Retelling the Story	It is important to read the Haggadah and "tell" over the story of Pesach. Children will know the tradition of "passing over" the story, mitzvot, and customs to the next generation.	Lessons 17-20

SCRATCHJR CONCEPTS

The most important skills and concepts from ScratchJr used in each lesson are as listed below (see Table 3). Note that this is not a complete list because each activity is meant to be creative and typically open-ended. This table is meant to indicate which skills it would be difficult to complete a lesson without. Students are always encouraged to use any blocks or skills they learn in class or on their own on any project.

Note: Lessons 19 and 20 are not included in the following table because they don't direct students to use any particular skills or blocks. The final project is intended to let children choose the story and purpose of their ScratchJr program.

ScratchJr Concept	Relevant Lessons
Sound Recording block	Lessons 3, 6, 7, 8, 9, 10
Paint editor	Lessons 7, 8
Start on Tap	Lessons 6, 7, 8, 12, 13
Stop Block	Lessons 2, 17
Start on Bump	Lessons 2, 17
Send Messages	Lessons 12, 15, 16
Repeat Loops	Lessons 6, 9, 10, 16
Project Sharing	Lessons 19, 20

Integrated Curriculum Design

The CAL approach allows students to make connections between coding and literacy, as well as between coding and Jewish studies. This curriculum encourages students to express their thoughts, ideas, and learning through ScratchJr activities related to Pesach. The curriculum is designed for a total of 20 hours, but can be adapted to particular learning settings. Each lesson contains a variety of activities, including:

- Design challenges to introduce the powerful ideas from computer science
- Discussions and activities addressing the powerful ideas from Pesach
- Reading or vocabulary activities to introduce the powerful ideas from literacy
- Work individually or in pairs on designing and creating projects
- Technology circles to share and reflect on activities

The culmination of the unit is an open-ended project to share with family and friends. Just as young children can read age-appropriate books, computer programming can be made accessible by providing young children with appropriate tools such as ScratchJr. This curriculum provides integration between Jewish education and programming in the context of Pesach. Students will learn about why Pesach is important and relevant to the Jewish community and use the new information they learn to write creative, fun programs on ScratchJr.

PACING

This is a 20-hour curriculum unit divided into approximately 1-hour lessons. Some students may benefit from further division of the activities into smaller steps or from more time to explore each new concept before moving onto the next, either in the context of free-exploration or with teacher-designed challenges. Each of the powerful ideas from computer science in this curriculum can easily be expanded into a unit of study which will extend the curriculum and allow students to explore a range of different activities.

Table 4: Pacing Guide

Lesson	Description
Theme 1: Chametz-Matzah	
Lesson 1:Making Matzah (60 minutes)	In this lesson, students will learn about the process of making Matzah in parallel with algorithms, one of the powerful ideas of computer science. A recipe provides a useful metaphor for an algorithm. Humans follow a series of steps specified by a recipe to make matzah, the same way that a computer uses a series of steps specified by an algorithm to reach a final outcome. Students will use How-To books as a starting point for an open-ended coding activity intended to re-familiarize them with ScratchJr.
Lesson 2: Chametz vs. Matzah (60 minutes)	In this lesson, children learn about the difference between Chametz and Matzah, and how and why we get rid of Chametz on Pesach. They will create a game on ScratchJr to demonstrate the process of cleaning for Passover.
Lesson 3: Ashkenazim and Sephardim Pesach Traditions (60 minutes)	Students will be able to explain Ashkenazim and Sephardim in terms of what foods can be eaten on Pesach. Specifically, they will understand that there are foods that Ashkenazim don't eat, which are considered Kitniyot (legumes), that Sephardim are able to eat on Pesach. These include corn, beans, rice. (This is a minhag-custom which has become halacha)
Lesson 4: Why do we eat Matzah at Pesach? Part I (60 minutes)	In this lesson, students will reflect on what they have learned in Lessons 1-3. They plan a program using the design process to tell a story of the importance of Matzah in Passover.
Lesson 5: Why do we eat Matzah at Pesach? Part II (60 minutes)	Students will complete their project from Lesson 4. Students will reflect on what they have learned in Lessons 1-3. They will use the design process to plan a program that tells a story to explain why Matzah is important to Passover. In this lesson, they will finish Step 4 and carry out Step 5, Test & Improve and Step 6, Share of the design process.
Theme 2: Freedom vs. Slavery	
Lesson 6: Avdut and Cherut (60 minutes)	In this lesson, children learn the contrasts between slavery and freedom and identify the parts of the Magid that represent slavery (avdut) or freedom (cherut). In pairs, students will complete a 2-page project representing "avadim hayinu", or "we were slaves" and contrasting with scenes of freedom.
Lesson 7: The Symbolism of the Seder Plate, Part I (60 minutes)	In this lesson, children will learn about the significance of the customs practiced in remembrance of slavery and freedom during the Pesach Seder. They will focus on special foods used as symbols on the Seder plate.

Lesson 8: The Symbolism of the Seder Plate, Part II (60 minutes)	In this lesson, children will continue learning about the significance of the customs practiced in remembrance of slavery and freedom.
Lesson 9: Dayenu! (60 minutes)	In this lesson, students will build a program to sing "Dayenu" (in "la's" or "lai's"; not words):

Theme 3: The Importance of the Number Four in the Haggadah

Lesson 10:Ma Nishtana (60 minutes)	In this lesson, children learn about how the four questions of the Ma Nishtana exemplify the prominence and importance of the number four in the Haggadah. They will complete a ScratchJr activity contrasting what is done on all other nights versus what is done on Passover based on one of the four questions.
Lesson 11: The Number Four (60 mins)	In this lesson, children learn about how the four questions of the Ma Nishtana exemplify the prominence and importance of the number four in the Haggadah. They will complete a ScratchJr activity contrasting what is done on all other nights versus what is done on Passover based on one of the four questions.
Lesson 12: Four Choices Quiz Game, Part I (60 minutes)	In this lesson, children will practice their knowledge of Pesach customs and the significance of the number four in Seder.
Lesson 13: Four Choices Quiz Game, Part II (60 minutes)	In this lesson, children will continue from Lesson 12 to build and program their quiz game.

Theme 4: The Four Children in Us

Lesson 14: The Four Children and the Haggadah (60 minutes)	Students will be able to learn who each of the four children are and identify each child based on the questions they ask. They will also be able to self-identify with one of the four children. They will be able to explain that there are various approaches in teaching the Haggadah depending on what type of child is being taught the approach needs to be tailored towards him or her. They will also learn how to use messages and create a scene in Scratch Jr.
Lesson 15: Redefining the 4 Children through Issues Important to Us (60 minutes)	Students will think about the four children as four possible stances one can take in any situation. For example, if bullying occurs the "wicked" child might be the one who joins in, the "simple" child might be the one who is a bystander, the "wise" child might be the one who is an upstander and intervenes and the "child who doesn't know how to ask" might be the child who laughs along not understanding that bullying is happening.
Lesson 16:The Four Children in Me (60 minutes)	Students will understand that each of us might be wise in some aspects of our lives and simple in others, e.g. depending on the subject matter.

Lesson 17: The Steps of the Seder (60 minutes)	Students will be able to identify the steps of the seder in order to recognize that when we reach Maggid we begin to retell the story of our exodus from Egypt. In this lesson, students will learn about the steps of the seder. They will also need to collaborate as a class or in smaller groups in order to create a multi tablet project that can be arranged to show the correct steps of the seder.
Lesson 18: What is the Afikoman? (60 minutes)	In this lesson, students will learn about the purpose of the Afikoman in the Seder, as well as the customs associated with it. They will code a scene in which a child searches for the Afikomen. They can simulate finding it by either making it invisible and having it appear, or having a character walk into a room on another page with the Afikomen in it. After finding it, the child will run to his/her friend to tell them where the Afikomen is hidden. They will run to their friend forever until they reach them, and will stop (with the stop block) on bump. After the friend is bumped, the friend will start jumping up and down in excitement.
Lesson 19: Retelling the Story of Pesach, part 1 (60 minutes)	In this lesson, students learn the importance of communicating effectively to an audience. Students engage in this learning by retelling a story to their peers and "edit" their story when their audience is confused and needs more clarification. Students connect this idea to when a ScratchJr program does not turn out the way they had expected. The process of figuring out what went wrong and how to fix things is called debugging.
Lesson 20: Retelling the Story of Peach, part 2 (60 minutes)	Students will be able to explain why it is important to read the Haggadah and "tell" over the story of Pesach (tradition of passing over the story, mitzvot, and customs to the next generation).

MATERIALS

Since this curriculum is based on ScratchJr the main material necessary for the students is iPads, Androids or Chromebooks (check here https://www.scratchjr.org/about/faq for devices compatible with ScratchJr) so children are able to code. In addition, there are ScratchJr block pages that can be printed to help with student comprehension. More information is provided in lessons that use these pages.

Other materials used in the curriculum are inexpensive crafts and recycled materials. The use of crafts and recycled materials, a practice already common in other domains of early childhood education, provides opportunities for children to use materials they are already comfortable with. Additionally, the use of materials that come from nature helps to supplement some of the main ideas of Pesach which are related to nature and sustainability

PEDAGOGICAL FRAMEWORK: POSITIVE TECHNOLOGICAL DEVELOPMENT and DIALOGIC INSTRUCTION

The theoretical foundation of this curriculum, called Positive Technological Development (PTD), was developed by Prof. Marina Umaschi Bers and can be found in her books: *Blocks to Robotics: Learning with Technology in the Early Childhood Classroom* (Bers, 2008), *Designing Digital Experiences for Positive Youth Development: From Playpen to Playground* (Bers, 2012), and *Coding as a Playground: Programming and Computational Thinking in the Early Childhood Classroom* (Bers, 2018). More information is included in the References section at the end of this curriculum.

The PTD framework guides the development, implementation and evaluation of educational programs that use new technologies to promote learning as an aspect of positive youth development. The PTD framework is a natural extension of the computer literacy and the technological fluency movements that have influenced the world of education but adds psychosocial and ethical components to the cognitive ones. From a theoretical perspective, PTD is an interdisciplinary approach that integrates ideas from the fields of computer-mediated communication, computer-supported collaborative learning, and the Constructionist theory of learning developed by Seymour Papert (1993) and views them in light of research in applied development science and positive youth development.

As a theoretical framework, PTD proposes six positive behaviors (six C's) that should be supported by educational programs that use new educational technologies, such as ScratchJr. These are: **content creation, creativity, communication, collaboration, community building, and choices of conduct**. The six C's of PTD are highlighted in the activities throughout the curriculum with their respective icons:

CONTENT CREATION by designing a ScratchJr program and programming its behaviors. The engineering design process of building and the computational thinking involved in programming foster competence in computer literacy and technological fluency.

CREATIVITY by making and programming personally meaningful projects, problem solving in creative playful ways and integrating different media such as recyclable materials, arts and crafts, and a tangible programming language. Final ScratchJr projects that represent a theme found in the overall early childhood curriculum are a wonderful way to engage children in the creative process of learning.

COLLABORATION by engaging children in a learning environment that promotes working in teams, sharing resources and caring about each other while working with their ScratchJr programs. Collaboration is defined here as getting or giving help with a project, programming together, lending or borrowing materials, or working together on a common task. While working on their final projects, children will collaborate with their peers.

COMMUNICATION through mechanisms that promote a sense of connection between peers or with adults. For example, technology circles, when children stop their work, share their ScratchJr creation, and explain their learning process. Technology circles present a good opportunity for problem solving as a community. Some teachers invite all the children to sit together in the rug area for this. Each classroom will have its own routines and expectations around group discussions and circle times, so teachers are encouraged to adapt what already works in their class for the technology circles in this curriculum.

COMMUNITY BUILDING through scaffolded opportunities to form a learning community that promotes contribution of ideas. Final projects done by children are shared with the community via an open house, demo day, or exhibition. These open houses provide authentic opportunities for children to share and celebrate the process and tangible products of their learning with family and friends. Each child is given the opportunity not only to run their program, but to play the role of teacher as they explain to their family how they built, programmed, and worked through problems.

CHOICES OF CONDUCT which provide children with the opportunity to experiment with "what if" questions and potential consequences, and to provoke examination of values and exploration of character traits while working with ScratchJr. As a program developed following the PTD approach, the focus on learning about coding is as important as helping children develop an inner compass to guide their actions in a just and responsible way.

In alignment with the Positive Technological Development (PTD) framework, this curriculum approaches literacy from the perspective of dialogic instruction. **Dialogic instruction** is a theory of learning (and teaching) premised on the belief that students engage with literacy instruction best when there are opportunities for them to engage in authentic, open-ended interpretation of texts. If a student does not have a voice, a position, or an evaluation of the text, then what good are literary skills? Only when she needs these tools for her own purpose, to help her achieve her own interpretation, and to convince others of it, will she have a reason and motivation (beyond getting a good grade) to acquire the tools being taught. This curriculum, in adherence with the theory of dialogic instruction, strives to place the student in the position of interpreter, with opportunities for authentic, open-ended interpretation of texts. This aligns with the curriculum's approach to coding where students are given opportunities for open-ended coding tasks that encourage them to explore their own expressive ideas.

CLASSROOM MANAGEMENT

Teaching programming in an early childhood setting requires careful planning and ongoing adjustments when it comes to classroom management issues. These issues are not new to the early childhood teacher, but they may play out differently during iPad activities because of the novelty of the materials themselves. Issues and solutions other than those described here may arise from classroom to classroom; teachers should find what works in their particular circumstances. In general, provide and teach a clear structure and set of expectations for using materials and for the routines of each part of the lessons (technology circles, clean up time, etc.). Make sure the students understand the goal(s) of each activity. Posters and visual aids can facilitate children's attempts to answer their own questions and recall new information.

GROUP SIZES

The curriculum refers to whole-group versus pair or individual work. In fact, some classrooms may benefit from other groupings. Whether individual work is feasible depends on the availability of supplies, which may be limited for a number of reasons. However, an effort should be made to allow students to work in as small groups as possible, even individually. At the same time, the curriculum includes numerous opportunities to promote conversations which are enriched by multiple voices, viewpoints, and experiences. Some classes may be able to have these discussions as a whole group. Other classes may want to break up into smaller groups to allow more children the opportunity to speak and to maintain focus. Some classes structure ScratchJr time to fit into a "center time" in the schedule, in which students rotate through small stations around the room with different activities at each location. This format gives students more access to teachers when they have questions and lets teachers tailor instruction and feedback as well as assess each students' progress more easily than during whole-group work. It is important to find a structure and group size for each of the different activities (instruction, discussions, work on the challenges, and the final project) that meet the needs of the students and teachers in the class.

ALIGNMENT OF ACADEMIC FRAMEWORK

This curriculum is designed as a beginners curriculum for ScratchJr and coding and is designed to be used from Kindergarten through third grade. The curriculum is s aligned with nationally recognized computer science frameworks, including the ISTE Standards for Students (2017), K–12 Computer Science Framework (2016) and the Massachusetts Digital Literacy and Computer Science (DLCS) Curriculum Framework (2016) as well as Common Core English Language Arts (ELA)/Literacy Framework (Council of Chief State School Officers, 2011). In addition, the Jewish materials and approach was designed by a a group of experienced Jewish educators representing orthodox, conservative and reform denominational movements in Judaism. The goal is that the curriculum could be used by any Jewish learning setting across the world.

Theme 1: Chametz-Matzah

Lesson 1: Making Matzah

OVERVIEW

In this lesson, students will learn about the process of making Matzah in parallel with algorithms, one of the powerful ideas of computer science. A recipe provides a useful metaphor for an algorithm. Humans follow a series of steps specified by a recipe to make matzah, the same way that a computer uses a series of steps specified by an algorithm to reach a final outcome. Students will use How-To books as a starting point for an open-ended coding activity intended to re-familiarize them with ScratchJr.

ACTIVITIES (15 min)

- How is Matzah Made (10 minutes)
- What is an Algorithm? How-To Books (15 minutes)
- Programming How Matzah is Made (20 min)

STUDENTS WILL BE ABLE TO...

☐ Explain the process of making Matzah

☐ Understand introductory algorithms by drawing on parallels between recipes and algorithms, and be re-familiarized with ScratchJr

POWERFUL IDEAS FROM COMPUTER SCIENCE

☐ Algorithms

☐ Representation

POWERFUL IDEAS FROM PESACH

☐ Chametz and matzah

SCRATCHJR CONCEPTS

☐ Beginner basics: green start, motion blocks, single character, say block, looks blocks (grow, shrink, hide, show), end block

Lesson 1: Activities

HOW IS MATZAH MADE? (10 MIN)

Ask students if they know how matzah is made. Explain that Matzah is made with flour and water, and baked for 18 minutes.

WHAT IS AN ALGORITHM? HOW-TO BOOKS (15 MIN)

Explain that an algorithm is a series of ordered steps taken in a sequence to solve a problem or achieve an end goal, the same way that a recipe is a series of steps taken in sequence to create a particular food. Students will complete How-To worksheets that explain how Matzah is made through a series of steps. Time permitting, students can decorate their worksheets.

SCRATCHJR ACTIVITY: PROGRAMMING HOW MATZAH IS MADE (20 MIN)

Building off of their How-To worksheets, students will create a program that demonstrates how Matzah is made. This program is intended to allow students to re-familiarize themselves with basic ScratchJr blocks, such as the green start block, the red end block, and the blue motion blocks. Students should start with just a single character, but can add more characters after they have mastered programming with the one character.

Example Blocks:

A full description of each of the ScratchJr blocks can be found at https://www.scratchjr.org/learn/blocks.

TECH CIRCLE (10 MIN)

Students can discuss problems they encountered when making their programs, and can discuss ideas for future programs about making Matzah.

Name:_____   Date:_____

Lesson 2:

How to make Matzah
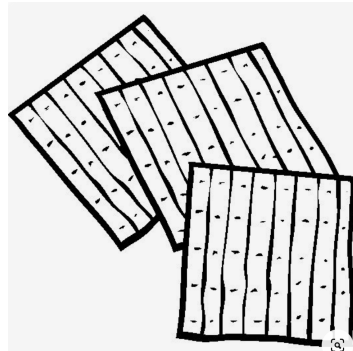
Your younger sibling needs help making Matzah. Help them by writing out the steps you need to do to make Matzah:

1. _____

_____

_____

_____

2. _____

_____

_____

_____

3.

4.

5.

6.

Lesson 2: Chametz vs. Matzah

OVERVIEW

In this lesson, children learn about the difference between Chametz and Matzah, and how and why we get rid of Chametz on Pesach. They will create a game on ScratchJr to demonstrate the process of cleaning for Passover.

ACTIVITIES

- What is Chametz? (10 minutes)
- Using the Stop Block and Start on Bump Block (15 min)
- Getting Rid of Chametz (30 minutes)
- Wrap-Up Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- Explain what Chametz is
- List all the ways we cannot have Chametz during Pesach

POWERFUL IDEAS FROM COMPUTER SCIENCE

☐ Modularity

POWERFUL IDEAS FROM PESACH

☐ Chametz and Matzah

SCRATCHJR CONCEPTS

☐ Message sending and receiving
☐ Wait block
☐ Stop block

WHAT IS CHAMETZ? (10 MIN)

חָמֵץ	Chametz	Leavened bread
מַצָּה	Matzah	Unleavened bread

Drawing on the previous lesson in which the students created a recipe for Matzah, discuss why some ingredients were allowed to be used while others weren't. To do this, introduce the concept of Chametz and discuss the difference between Chametz and Matzah. Explain that is either anything that contains yeast/grain mixed with water more than 18 min.
What do the kids usually eat on a daily basis? What types of food to they have for breakfast/lunch/and dinner? Talk about which of those foods are classified as Chametz.

USING THE STOP BLOCK AND START ON BUMP BLOCK (15 MIN)

The teacher should demonstrate how to use the stop block and the start on bump block in ScratchJr. The stop block is used to terminate all programs running for a particular character except the program that contains the stop block itself. The start on bump block is used to make a character's program start after another character bumps another character. To teach these blocks, the teacher should have two characters. The first character has two programs: one that repeats forever and a second one that stops when it's bumped. The second character should have a sequence that repeats forever. For example:

Add a child character and a Chametz character (pizza, cake, etc) to a ScratchJr project. Encourage children to imagine a story where the child has been looking for Chametz to throw away, and they're very excited to find some! They run to the food. The child will stop moving as soon as it bumps into the food, but the food will keep jumping forever. Point out that after the child bumps the food, s/he moves from the code after the "start on tap" block to the code after the "start on bump" block, which tells the child to stop.

SCRATCHJR ACTIVITY: GETTING RID OF CHAMETZ (30 MIN)

Explain all ways in which we can not have Chametz: we can't eat it, can't see it (can't own it), and can't get enjoyment out of giving it to someone else. Then explain the various steps in which we get rid of the Chametz in our homes: searching for Chametz, burning Chametz, selling the Chametz.

For the ScratchJr Activity, students will create a game in which players have to identify Chametz when it appears on the screen and get rid of it.

1. Open the ScratchJr app.

2. Click the plus sign to open a new project under "My Projects".

3. The students will have pieces of paper with different food on them. Have the students create a character for each food by taking pictures of each one.

4. Have the characters appear and disappear one after another. When the green flag is pressed, have the first character appear, wait for a few seconds, disappear, and send a message to the next character. When the second character receives the message, have it go through the same steps as the first until all of the characters have appeared and disappeared. For a reminder on how messages work, see Lesson 15.

5. For each Chametz food, create the option that if it is tapped, it will disappear, all the other code for that character will stop, and a message will be sent to the next food. That will count as a point.

6. Have students decide if they want to burn the Chametz or sell it. Make sure that the code represents that choice (e.g. Make the noise "Cha-ching" when Chametz is tapped or have a fire appear when it is tapped).

WRAP-UP ACTIVITY (10 MIN)

When the game is finished, have the students get in groups of five, put the iPads in a circle, and start their programs at the same time. The children will have to search for the Chametz on all of the iPads, not just their own. Make sure to keep track of how many points they get (one point for each Chametz tapped).

Lesson 3: Ashkenazim and Sephardim

OVERVIEW

Students will be able to explain Ashkenazim and Sephardim in terms of what foods can be eaten on Pesach. Specifically, they will understand that there are foods that Ashkenazim don't eat, which are considered Kitniyot (legumes), that Sephardim are able to eat on Pesach. These include corn, beans, rice. (This is a minhag-custom which has become halacha)

ACTIVITIES

- Chamtez Refresher (5 minutes)
- Chametz Doesn't Just Mean One Thing (10 minutes)
- ScratchJr Refresher (10 minutes)
- Ashkenazim vs. Sephardim Foods (30 minutes)
- Wrap-Up Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- Explain Ashkenazim and Sephardim in terms of what foods can be eaten on Pesach

POWERFUL IDEAS FROM COMPUTER SCIENCE

☐ Algorithms

☐ Hardware/Software

POWERFUL IDEAS FROM PESACH

☐ Chametz and Matzah

SCRATCHJR CONCEPTS

☐ Say Block
☐ Sound Record Block
☐ Turn Page

CHAMETZ REFRESHER (5 MIN)

Ask students what they remember from the previous lesson. Remind children about the different foods we eat at Pesach, and the words we use to categorize foods, such as Matzah and Chametz. See Lesson 2 for a summary of this content.

CHAMETZ DOESN'T JUST MEAN ONE THING (10 MIN)

Explain the difference between Ashkenazi Jewish people and Sephardic Jewish people. Point out on a map where in the world they come from. Ask the class if anybody knows where their family originally comes from, and have them identify whether that means they are Ashkenazi or Sephardic.

Explain that Ashkenazi and Sephardic Jewish people have different foods that they are allowed to eat on Passover, mainly that Ashkenazi Jews cannot eat Kitniyot (legumes).

קִטְנִיּוֹת	kitniyot	legumes
אַשְׁכְּנַזִּים	Ashkenazim	Jewish people whose ancestry comes from northwest Europe (Germany and northern France, but then extended to Poland and eastern Europe)
סְפָרְדִּים	Sephardim	Jewish people whose ancestry come from Europe (namely, those originally settling in Spain and Portugal) and their descendants (including those living in North Africa and the Ottoman Empire and also in Western Europe)

Have the kids come up to the front of the classroom one by one and pin a cut out of a food on the correct space in the following Venn Diagram.
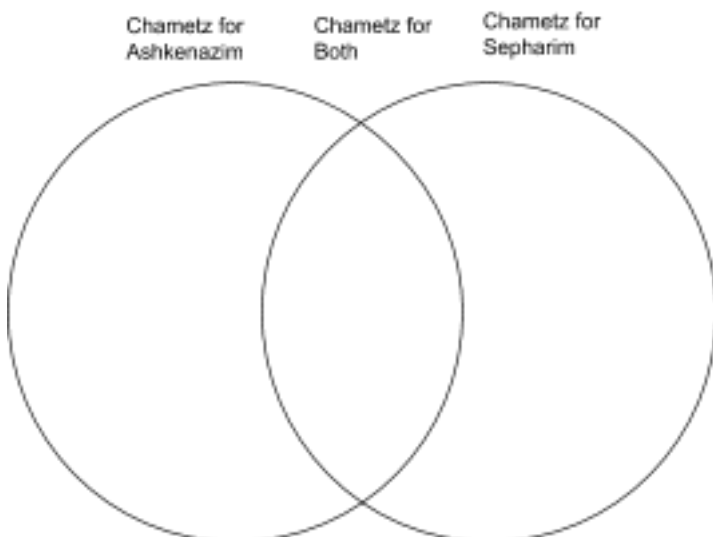
SCRATCHJR REFRESHER (10 MIN)

Project your ScratchJr tablet screen onto a large wall for children to see. While they watch, create a simple sequence with motion blocks, a Say block (speech bubble), and a sound. For children who need a refresher, demonstrate how to use these two blocks by tapping them and observing what happens to the character.

Example:

You may also wish to demonstrate how to add and turn a page in the project. To continue a story onto another page, add the red end block with a picture of the next page to one of your programs. This creates a "Turn Page" program function.
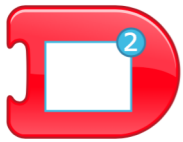
Go to Page Block

SCRATCHJR ACTIVITY: ASHKENAZIM VS. SEPHARDIM FOODS (30 MIN)

Hand out the tablets. Explain that students will create a multi-page project to explain the differences in what Ashkenazim and Sephardim eat at Pesach. They can create food characters that talk or display text when tapped to share whether they are Matzah, Chametz, or Kitniyot. If children know what they do at their homes, they integrate their family's practices into their project.

Children can begin to make their own projects with Say blocks and/or recorded sound blocks. Children can use these features to create their multi-page story about what they do and don't eat at Pesach. Encourage them to add pages to their stories, and insert the sounds or texts they would like.

WRAP-UP ACTIVITY (10 MIN)

Reflect with children about their projects and the unique Pesach customs they have in their homes. If time allows, one or two children may volunteer to project their work onto the overhead projector you used in the beginning of class.

Lesson 4: Why do we eat Matzah at Pesach? Part 1

OVERVIEW

In this lesson, students will reflect on what they have learned in Lessons 1-3. They plan a program using the design process to tell a story of the importance of Matzah in Passover.

ACTIVITIES

- Why Matzah (10 minutes)
- Introduction to the Design Process: Coding a Story about the Origins of Matzah (15 minutes)
- ScratchJr Programming (25 minutes)
- Wrap-up Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- Explain the significance of Matzah on Passover
- Use the design process to create a project on what they know about Matzah and Passover

POWERFUL IDEAS FROM COMPUTER SCIENCE

- ☐ Design Process
- ☐ Representation

POWERFUL IDEAS FROM PESACH

- ☐ Chametz and Matzah
- ☐ Slavery and Freedom

SCRATCHJR CONCEPTS

- ☐ Beginner basics: Green start, motion blocks, single character, say block, looks blocks (grow, shrink, hide, show), end block
- ☐ Optional Intermediate: wait, repeat, start on tap

WHY MATZAH (10 MIN)

Remind students that there are a lot of special foods that we eat on Pesach. Ask if they can name the food that we usually eat instead of Chametz, and ask if anyone knows *why* we eat that food. Explain that when the Jewish people fled Egypt, they wanted to make bread for the food on their long journey through the desert. Explain that since they were in a hurry to escape the Egyptians on time, they had to take the bread before it finished baking. Ask students why Jews were fleeing from Egypt so quickly, then explain that we only eat Matzah on Pesach to remember when our Jewish ancestors did not have time to bake Chametz.

Introduction to the Design Process: Coding a Story about the Origins of Matzah (15 minutes)
Explain to children that they will be building a story to share with others about why Jewish people eat matzah, and how it was created during the Jewish exile from Egypt. Invite them to think about how quickly Jews must have had to flee to not have time to bake their Chametz.

Explain the Design Process using the Design Process Anchor Chart (see below). When making projects, programmers follow a series of steps called the Design Process. It has 6 steps: ASK, IMAGINE, PLAN, CREATE, TEST & IMPROVE, and SHARE. The design process is a **cycle.** You can begin at any step, move back and forth between steps, or repeat the cycle over and over.
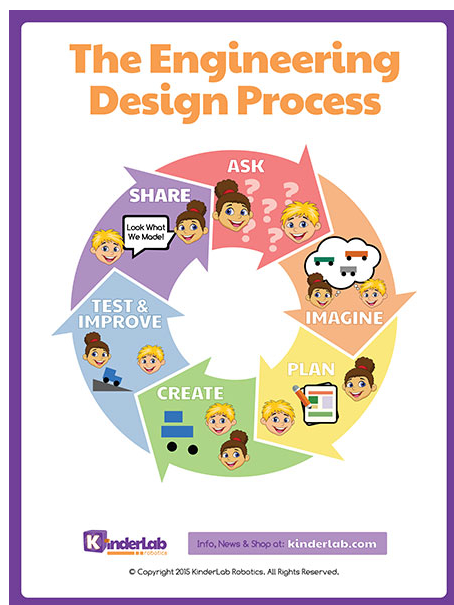
Ask: How can we explain why we eat Matzah on Passover using ScratchJr?
Imagine: Potential explanations (Jews were rushed by the Egyptians to leave Egypt and did not have enough time to let the dough rise), or Matzah is a Mitzvah and definition of a Mitzvah
Plan: Students plan out their programs **before** starting to code
Create: Students begin coding
Test & improve: Does the program satisfy goal of explaining why we eat Matzah on Passover?
Share: Students will share their program with classmates, explaining how their program demonstrates the significance of Matzah.

INTRODUCTION TO THE DESIGN PROCESS: CODING A STORY ABOUT THE ORIGINS OF MATZAH (15 MIN)

Working alone or in groups, allow children time to plan and design their ScratchJr Chamez vs Matzah projects. You can engage children in all or some of the steps of the design process (based on their attention levels or how much progress they've already made on their project idea). Use the ideas below to help children prepare to create their project.

Ask **(Step 1 of the Design Process):** How can we explain why we eat Matzah on Passover using ScratchJr? Students will use the Design Process to create a program that demonstrates the significance of Matzah on Passover. Use this central question as the starting point for the Design Process.

Imagine **(Step 2 of the Design Process):** Ask students to brainstorm ideas for potential answers to the central question, and how they could use ScratchJr to convey their ideas. This story-based project can take on a variety of forms (e.g. a story showing the story of the Jews leaving Egypt, a story about how we remove Chametz items from our home).

Plan **(Step 3 of the Design Process):** Have students plan their program using the Design Process worksheet.

Design Process Worksheet

Ask: What activities do you want your characters to do?

_____

_____

Imagine: What will your project look like? What characters will you have?

_____

_____

Plan: Draw the characters and blocks that you will use in your program.

Lesson 4: Activities

Create **(Step 4 of the Design Process):** Using our plans from the previous day, invite children to start coding their project. Remind them that if they do not finish in time, they will continue to code and revise their projects during the next lesson.

Students will carry out Steps 4, 5, and 6 of the Design Process in Lesson 5.

SCRATCHJR PROGRAMMING (25 MIN)

Using the first four steps of the design process, have students begin their ScratchJr projects. Go through steps 1 and 2 (ASK and IMAGINE) as a class before having students plan their projects individually in their Design Process worksheet. Once students have planned their projects, they can start coding their project. It is ok if students don't finish their projects, they will have time to debug and finish them in Lesson 5.

WRAP-UP ACTIVITY (10 MIN)

Have groups share their ideas with the class. Open up the door for discussion and suggestions for how each group might improve or enhance the project. Encourage students to brainstorm potential difficulties that may arise with each project, and to ask questions.

Lesson 5: Why do we eat Matzah at Pesach? Part 2

OVERVIEW

Students will complete their project from Lesson 4. Students will reflect on what they have learned in Lessons 1-3. They will use the design process to plan a program that tells a story to explain why Matzah is important to Passover. In this lesson, they will finish Step 4 and carry out Step 5, Test & Improve and Step 6, Share of the design process.

ACTIVITIES

- Project Continuation (5-10 minutes)
- Matzah Story (40 minutes)
- Wrap - Up Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- Explain the significance of Matzah on Passover
- Use the design process to create a project on what they know about Matzah and Passover

POWERFUL IDEAS FROM COMPUTER SCIENCE

- ☐ Design Process
- ☐ Debugging

POWERFUL IDEAS FROM PESACH

- ☐ Chametz and Matzah
- ☐ Slavery and Freedom

SCRATCHJR CONCEPTS

- ☐ Speed Block
- ☐ Optional Intermediate: wait, repeat, start on tap

Lesson 5: Activities

PROJECT CONTINUATION (5-10 MIN)

Review lesson content and activity. Ask if students have any questions, comments, or concerns. Students will be continuing to work on their project from Lesson 4.

MATZAH STORY (40 MIN)

Students will finish creating their Matzah story from Lesson 4.

Create **(Step 4 of the Design Process):** Using our plans from the previous day, invite children to continue coding their project, if they have not already started.

Encourage children to use the Speed Block in their story, for example, to show how quickly Jews fled, or how slowly Matzah rises.

Using the Speed block, characters in ScratchJr can be made to move at different speeds (fast, regular, slow, also called "run, walk, crawl"). You can introduce the speed programming block and demonstrate how to use it on the ScratchJr application.

Test and Improve **(Step 5 of the Design Process):** After students complete their Matzah story, have them work in pairs or small-groups to "test" out each other's stories. Allow them to give each other feedback. Some sentence starters and guiding questions include "I like how your program…" or "I think ____ could improve your program, because…"

Students will then utilize their peer feedback to further improve their programs, returning to **step 4** of the design process. Encourage children to iterate between steps as often as they need to in order to complete the project.

WRAP-UP ACTIVITY (10 MIN)

Share **(Step 6 of the Design Process):** An important piece of the Design Process is sharing what we've made with others. Have students share their projects with the class. You may have the class give feedback or explain their projects further. Guiding questions: *What feedback did your peer give you? How did you improve your project (in Step 5 of the design process)?*

Theme 2: Freedom vs. Slavery

Lesson 6: Avdut and Cherut

OVERVIEW

In this lesson, students learn the contrasts between slavery and freedom and identify the parts of the Magid that represent slavery (avdut) or freedom (cherut). In pairs, students will complete a 2-page project representing "avadim hayinu", or "we were slaves" and contrasting with scenes of freedom.

ACTIVITIES

- What do Freedom and Slavery Mean? (5-10 minutes)
- ScratchJr Refresher (10 minutes)
- Avadim Hayinu (30 minutes)
- Sharing Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- Identify the difference between the terms "slavery (avdut)" and "freedom (cherut)"

POWERFUL IDEAS FROM COMPUTER SCIENCE

☐ Hardware/Software

POWERFUL IDEAS FROM PESACH

☐ Freedom and Slavery (Avdut and Cherut)
☐ Remembering our past and retelling our history

SCRATCHJR CONCEPTS

☐ Sounds/Record Block
☐ Turn Page block
☐ Repeating Loops
☐ Start on Tap

Lesson 6: Activities

WHAT DO FREEDOM AND SLAVERY MEAN? (5-10 MIN)

Ask students if anyone can explain the difference between freedom and slavery. Explain that the Jewish people were slaves in Egypt, and Passover celebrates how they became free. Make a chart on paper or a whiteboard that shows slavery on one side and freedom on the other. Ask students to name some characteristics of each, and write these on the board. Fill in some answers when necessary.

SCRATCHJR REFRESHER (10 MIN)

Remind children about intermediate ScratchJr concepts they may recall from prior activities: Wait block, Repeat, Start on Tap.

Wait programs your character to take a break or pause within the program. The number refers to TENTHS (1/10) of a second, not seconds. So a Wait block with a 10 number parameter will pause the program for 1 second.

Repeat Loops allows all blocks within the loop to repeat. They repeat as many times as the number parameter (in the picture above the blocks will repeat 4 times).

Start on Tap allows characters to begin a program when tapped.

SCRATCHJR ACTIVITY: AVADIM HAYINU (30 MIN)

Tell students that they will be working with a partner to make a 2- page project: 1 page about slavery and 1 page about freedom. On the page about freedom, everyone should include a character who sings Avadim Hayinu when tapped.

Pairs of students will create a 2-page project representing "avadim hayinu", or "we were slaves" and contrasting with scenes of freedom. They can use Turn Page block to transition between scenes. The pair will record the "avadim hayinu" song. See Lesson 3 for refresher on sound recording.

עַבְדוּת	avdut	slavery
חֵרוּת	ḥerut	freedom

Magid portions that represent Avdut or Cherut or both:

- Kadesh=Cherut(reminds us how we left Egypt)

- Ha Lachma Anya=both Avdut and Cherut (Matzah is the Lechem Oni, however the jews made it in a hurry to leave Egypt)

- Ma Nishtana=both Avdut and Cherut(We eat Matzah and Maror to remind of slavery but we dip and lean because we are free)

- Avadim Hayinu=Avdut (reminder that we were slaves in egypt)

- Hallel=Cherut (we sing songs of praise for being freed)

הַגָּדָה	haggada	book of the telling of the story of Passover

SHARING ACTIVITY (10 MIN)

Have each pair of students get in a group with two other pairs of students. Have students take turns sharing their projects.

Lesson 7: The Symbolism of the Seder Plate Part 1

OVERVIEW

In this lesson, students will learn about the significance of the customs practiced in remembrance of slavery and freedom during the Pesach Seder. They will focus on special foods used as symbols on the Seder plate.

ACTIVITIES

- Introduce the Seder Plate (20 minutes)
- Designing and Coding our Seder Plate (35 minutes)
- Wrap - up Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- List Pesach customs and foods from the Seder

POWERFUL IDEAS FROM COMPUTER SCIENCE

☐ Representation
☐ Design Process

POWERFUL IDEAS FROM PESACH

☐ The Seder Plate

SCRATCHJR CONCEPTS

☐ Say block
☐ Record Sound
☐ Start on Tap

INTRODUCE THE SEDER PLATE (20 MIN)

Explain that on Passover, many foods and items are symbolic of the things our ancestors went through. Can anyone name some? Go over all the different seder plate symbols, asking students to guess what each item means.

- Eating maror – slavery because it is bitter and reminds us of the bitter lives the Jews had in time of slavery
- Drinking four cups of wine – freedom because we are like kings
- Eating matzah – both because we remember the bread of affliction and we remember that we came out in a hurry, but it is freedom because it represents our exodus from Egypt
- Eating charoset – both because it represents the mortar from times of slavery, but it is sweet to remind us of our freedom
- Eating Karpas – freedom because we eat celery/parsley/potato is green and we came out of slavery in the spring
- We lean during the seder-freedom because we are sitting like royalty
- Egg – freedom because it represents a celebration sacrifice
- Shankbone – slavery because the Jews had to eat the Korban Pesach (the paschal lamb) when they were still slaves in Egypt. This is the one thing on the Seder plate that we do not eat.
- Saltwater – slavery because it represents the tears of the Jews during the time of slavery

Remind children of the hebrew names for all of the Seder foods:

מָרוֹר/חֲזֶרֶת	maror/ḥazeret	bitter herbs
חֲרֹסֶת	ḥaroset	a mixture commonly with apples (or other fruits), nuts, and wine
כַּרְפַּס	karpas	celery
בֵּיצָה	beitzah	egg
זְרֹועַ	z'ro·a	shankbone
סֵדֶר	seder	order

עֲבָדִים הָיִינוּ, הָיִינוּ, עַתָּה בְּנֵי חוֹרִין, בְּנֵי חוֹרִין.
עֲבָדִים הָיִינוּ,
עַתָּה, עַתָּה בְּנֵי חוֹרִין, בְּנֵי חוֹרִין.

SCRATCHJR ACTIVITY: DESIGNING AND CODING OUR SEDER PLATES (35 MIN)

Students will begin designing their personal ScratchJr Seder Plate. Remember to include locations for all foods. For this activity, children will need to create their own original characters and backgrounds to represent the plate and foods. Remember to check whether children are working on Backgrounds or Characters. Characters can be moved and programmed; Backgrounds cannot. See below a guide on using the Paint Editor interface:

Lesson 7: Activities
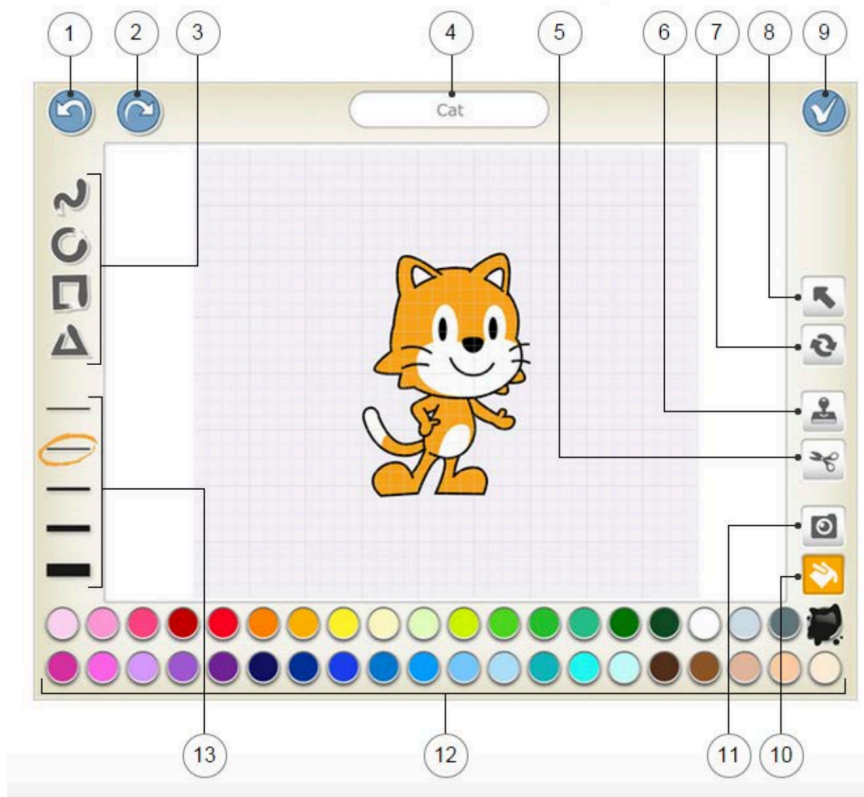
1 Undo
Reverses the most recent change.

2 Redo
Reverses the most recent Undo.

3 Shape
Choose a shape to draw: line, circle/ellipse, rectangle, or triangle.

4 Character Name
Edit the name of the character.

5 Cut
After selecting the Cut tool, you can tap a character or shape to remove it from the canvas.

6 Duplicate
After selecting the Duplicate tool, you can tap a character or shape to create a copy of it.

7 Rotate
After selecting the Rotate tool, you can rotate a character or shape around its center.

8 Drag
After selecting the Drag tool, you can drag a character or shape on the canvas. If you tap on a shape, you can then edit the shape by dragging the dots that appear.

(9) **Save**
Save changes and leave the paint editor.

(10) **Fill**
After selecting the Fill tool, you can tap any section of a character or shape to fill it with the currently selected color.

(11) **Camera**
After selecting the Camera tool, you can tap any section of a character or shape, and then tap the camera button to fill the section with a new photo taken with the camera.

(12) **Color**
Select a new color to use for drawing and filling in shapes.

(13) **Line Width**
Change the width of the lines in the shapes you are drawing.

When ready, animate the food on your plate to show or say hebrew names when tapped. When tapped, food picture will animate (e.g. hide and show, dance) and will "say" or play back recording of hebrew word. Continue working on this for the rest of lesson.

WRAP-UP ACTIVITY - PAIR SHARE (10 MIN)

Gather into a closing circle. Have students share their Seder Plate ScratchJr. Project in pairs or small groups. Students should show their plate to their partner and let their partner click on their project so the food descriptions pop up.

If they have not finished their project, remind children that although they may have more work to do on their games, they will have more time to work on this project. They should share what they have and also share what they learned in today's lesson with their partner or group. Discuss what they plan to add to their games, any issues that arose, and how people solved them.

Lesson 8: The Symbolism of the Seder Plate Part 2

OVERVIEW

In this lesson, children will continue learning about the significance of the customs practiced in remembrance of slavery and freedom during the Pesach Seder. They will focus on special foods used as symbols on the Seder plate.

ACTIVITIES

- Troubleshooting Seder Plate Projects (10 minutes)
- Discussing Customs (10 minutes)
- Finishing Seder Plates (25 minutes)
- Sharing My Seder Plate (15 minutes)

STUDENTS WILL BE ABLE TO...

- List Pesach customs and foods from the Seder

POWERFUL IDEAS FROM COMPUTER SCIENCE

- ☐ Representation
- ☐ Design Process
- ☐ Debugging

POWERFUL IDEAS FROM PESACH

- ☐ The Seder Plate

SCRATCHJR CONCEPTS

- ☐ Say block
- ☐ Record Sound
- ☐ Start on Tap

TROUBLESHOOTING SEDER PLATE PROJECTS (10 MIN)

This lesson will begin with a Tech Circle to resolve issues and questions about building a seder plate in ScratchJr. Guiding questions include: *What works well in your project? What are you struggling with in your program?* This would also be an opportunity to let ScratchJr proficient students help out students who may be struggling.

DISCUSSING CUSTOMS (10 MIN)

Pair students off and see which pair can remember the most Seder plate foods and their meanings. The pair that gets the most wins!

- Eating maror – slavery because it is bitter and reminds us of the bitter lives the Jews had in time of slavery
- Drinking four cups of wine – freedom because we are like kings
- Eating matzah – both because we remember the bread of affliction and we remember that we came out in a hurry, but it is freedom because it represents our exodus from Egypt
- Eating charoset – both because it represents the mortar from times of slavery, but it is sweet to remind us of our freedom
- Eating Karpas – freedom because we eat celery/parsley/potato is green and we came out of slavery in the spring
- We lean during the seder-freedom because we are sitting like royalty
- Egg – freedom because it represents a celebration sacrifice
- Shankbone – slavery because the Jews had to eat the Korban Pesach (the paschal lamb) when they were still slaves in Egypt. This is the one thing on the Seder plate that we do not eat.
- Saltwater – slavery because it represents the tears of the Jews during the time of slavery

Remind children of the Hebrew names for all of the Seder foods:

מָרוֹר/חֲזֶרֶת	maror/ḥazeret	bitter herbs
חֲרֹסֶת	ḥaroset	a mixture commonly with apples (or other fruits), nuts, and wine
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סֵדֶר	seder	order

עֲבָדִים הָיִֽינוּ, הָיִֽינוּ, עַתָּה בְּנֵי חוֹרִין, בְּנֵי חוֹרִין.
עֲבָדִים הָיִֽינוּ,
עַתָּה, עַתָּה בְּנֵי חוֹרִין, בְּנֵי חוֹרִין.

FINISHING SEDER PLATES (25 MIN)

Spend more time animating food. If time permits, extend the previous lesson's project by adding a voice recording to explain symbolism of some or all foods.

SHARING MY SEDER PLATE (15 MIN)

Students can play each other's seder plate games to practice their knowledge of the food names and symbolism.

Lesson 9: Dayenu! (60 minutes)

OVERVIEW

In this lesson, students will build a program to sing "Dayenu" (in "la's" or "lai's"; not words):
https://www.youtube.com/watch?v=8p1pabOX3fc

ACTIVITIES

- What Are You Grateful For? (5 minutes)
- Introduction to Dayenu (5 minutes)
- Introduce Nested Loops (10 minutes)
- Record Dayenu (30 minutes)
- Wrap-up Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- Recognize all the miracles involved in being freed from Egypt
- Understand the meaning behind "Dayenu" (דַּיֵּנוּ)

POWERFUL IDEAS FROM COMPUTER SCIENCE

- ☐ Algorithms
- ☐ Modularity
- ☐ Control Structures

POWERFUL IDEAS FROM PESACH

- ☐ Slavery and Freedom

SCRATCHJR CONCEPTS

- ☐ Record Sound
- ☐ Nested Repeat Loops

WHAT ARE YOU GRATEFUL FOR? (5 MIN)

Can students think of a time when they didn't get something they want? What about something they're very grateful for? Go around and share. Explain that while we may not always get what we want in life, there are lots of good things that we *do* have in life, such as freedom from slavery, and it's important to appreciate G-d for all that we have. This is a big idea we sing about when we sing "Dayenu" on Passover.

INTRODUCTION TO DAYENU (5 MIN)

דַּיֵּנוּ	dayenu	It would have been enough

Introduce the concept of Dayenu. Explain that just like we have to appreciate what we have, the Jewish slaves of Egypt learned to appreciate each individual miracle that G-d performed for them, rather than constantly ask for more. Hence, each miracle "would have been enough" on its own. Play the video (linked above) for children so they can hear the song, and then discuss its meaning as a class. Play the song again, then sing through the melody a few times together so that students can learn it well.

INTRODUCE NESTED LOOPS (10 MIN)

Explain that nested programs are when we place a Repeat block inside of another Repeat block. Like a program inside of a program! Begin a discussion around nested statements by asking the class, "can anyone think of some reasons why nested programs might be useful?" or "how is repeating two repeat loops in a bigger one different from just repeating the bigger one more times?"

Show them this program:

And this program:

How do they think the two programs will differ (What are their **hypotheses**)? In what order will things happen? Play the programs for the students. What was the difference? Were hypotheses on point? Off? If it helps, point to each block of code as the program performs it to show students the order of a program that uses nested loops.

SCRATCHJR ACTIVITY: RECORD "DAYENU" (30 MIN)

Recording Sounds: Some children may recognize the microphone from apps or computer programs. Create a sound block and demonstrate how to press the red circle to begin recording a sound, and triangle, check, or square to stop it. You can show how the red lines move when recording. Practice recording one or two more times with a child making a funny sound. Create a demo program to play your new Sound Recordings!

Allow children to build their programs and record the sounds they need for their stories. They may need to go to a quiet place to record new sounds, like a reading nook or rest area. After they finish recording, they can begin to sequence their sounds into programs. Use the Sound Recorder with repeats to integrate repeating verses and notes.

1. Open the ScratchJr app.

2. Click the plus sign to open a new project under "My Projects".

3. Each student will now begin coding the melody of "Dayenu" using nested repeat loops and recorded sound blocks. They should record one verse and one chorus and make this repeat three times to match the length of the song in the video.

4. When students record their voice, they should only sing the melody in "la"'s or "lai"'s.

5. For each note that is the same ("hotzi hotzi", "natan natan", "day day", etc.) , students can record a single "la" to represent the note and repeat it multiple times with repeat blocks.

6. Since the chorus repeats twice each time it is sung in the song, it should be recorded once and put in a repeat block that makes it play twice.

WRAP-UP ACTIVITY - CHORUS (10 MIN)

Have the class form a chorus and sing along with their Scratch Jr. projects (those that have finished) in a performance of "Dayenu."

Theme 3:
The Importance of the Number Four in the Haggadah

Lesson 10: Ma Nishtana

OVERVIEW

In this lesson, students learn about how the four questions of the Ma Nishtana exemplify the prominence and importance of the number four in the Haggadah. They will complete a ScratchJr activity contrasting what is done on all other nights versus what is done on Passover based on one of the four questions.

ACTIVITIES

- The Four Questions Song (5 minutes)
- Introduce the Four Questions (10 minutes)
- Planning a Four Questions Story (15 minutes)
- Creating a Four Questions Story (25 minutes)
- Sharing Stories (5 minutes)

STUDENTS WILL BE ABLE TO...

- Students will be able to list the four questions of the Ma Nishtana

POWERFUL IDEAS FROM COMPUTER SCIENCE

☐ Modularity
☐ Control Structures

POWERFUL IDEAS FROM PESACH

☐ The importance of the number four in the Haggadah

SCRATCHJR CONCEPTS

☐ Repeat loops
☐ Sound recorder

THE FOUR QUESTIONS SONG (5 MIN)

Students will build a program to sing the four questions song. Hear song and view original Hebrew here: https://www.youtube.com/watch?v=S2rlTO9nHH8

Students will record the song and create a page for each question proposed in the song using repeat loops, message sending, sound recorder.

INTRODUCE THE FOUR QUESTIONS (10 MIN)

Discuss the four questions of the Ma Nishtana and the importance of the number four in the Haggadah. Play the Four Questions song with the students. Go into each question, and see which ones each student can answer.

1. Why is it on all other nights we eat chametz or matzah, and on this night only matzah?
2. Why is it on all other nights we eat any kind of vegetables, and on this night only the bitter ones?
3. Why is it that on all other nights we need not dip even once (our food), on this night we do so twice?
4. Why is it on all other nights we eat sitting upright or reclining, and on this night we all recline?

PLANNING A FOUR QUESTIONS STORY (15 MIN)

Have students plan a multi-page story to recite the Four Questions with a recording of the Four Questions song.

CREATING A FOUR QUESTIONS STORY (25 MIN)

Using their plans, children should code their Four Questions project. Students will create and animate a page for each question. They will then record sections of the song that match each page, using the sound recorder block. Have students program their story so that the correct page is shown when the corresponding question is discussed in the song. Students should use Turn Page block to turn the pages programmatically.

SHARING STORIES (5 MIN)

Have students share their stories in small groups. You can end with a singalong of all your musical projects!

Lesson 11: The Number Four

OVERVIEW

In this lesson, children learn about how the four questions of the Ma Nishtana exemplify the prominence and importance of the number four in the Haggadah. They will complete a ScratchJr activity contrasting what is done on all other nights versus what is done on Passover based on one of the four questions.

ACTIVITIES

- The Number Four in the Passover Seder (15 minutes)
- Ma Nishtana: Spot the Difference (35 minutes)
- Tech Circle (10 minutes)

STUDENTS WILL BE ABLE TO...

- List the four names of the holiday of Pesach
- Identify what each of the four cups of wine represent
- List the four questions of the Ma Nishtana

POWERFUL IDEAS FROM COMPUTER SCIENCE

☐ Representation

POWERFUL IDEAS FROM PESACH

☐ The importance of the number four in the Haggadah

SCRATCHJR CONCEPTS

☐ Basic & Intermediate blocks

THE NUMBER FOUR IN THE PASSOVER SEDER (15 MIN)

Recall from the previous activity that we learned how the number four is symbolic in Judaism and especially important in the Haggadah. Explain that there are many examples of "four" in the Haggadah, and ask students to try to name a few of them as a class. [Note for teachers: the four sons will be covered in a later lesson, but do constitute a good example of this]. Write students' ideas on the board.

Explain that there are four names for the holiday of Passover: Chag Hamatzot, Chag Hapesach, Chag Ha Aviv, and Zman Cherutainu. Discuss as a class why the holiday might have four names— why do all of these names make sense?

חַג הַמַּצוֹת	ḥag hamatzot	festival of leavened bread
חַג הַפֶּסַח	ḥag hapesaḥ	festival of the paschal offering
חַג הָאָבִיב	ḥag ha·aviv	festival of spring
זְמַן חֵרוּתֵּנוּ	z'man ḥeiruteinu	time of our freedom

There are also four cups of wine that we drink over the course of the seder:

וְהוֹצֵאתִי	v'hotzeiti	I will take you out of slavery
וְהִצַּלְתִּי	v'hitzalti	I will save you
וְגָאַלְתִּי	v'ga'alti	I will redeem you
וְלָקַחְתִּי	v'lakaḥti	I will take you as my nation

Explain how these four cups relate to the story of Passover. As we progress through the seder, we recount the journey from slavery through freedom. By the end of the seder, the Jewish people, once slaves, have been promised a nation of their own where they can finally be free.

SCRATCHJR ACTIVITY: MA NISHTANA: SPOT THE DIFFERENCE (35 MIN)

Explain that the four questions of the Ma Nishtana each relate to a difference between what we do on "all other nights" and what is done especially on Passover. On all other nights, we can eat chametz *and* matzah, but on this night, we eat only matzah. On all other nights, we can eat all vegetables, but on this night, we eat only bitter herbs. On all other nights, we don't even dip once, but on this night, we dip twice. On all other nights, we sit sitting up and reclining, but on this night we only recline. Why?

We eat matzah because when we were fleeing Egypt as slaves, there was no time for the bread to rise. We eat bitter herbs to remember the bitterness of slavery. Dipping in salt water reminds us of the tears that our ancestors cried when they were slaves, and dipping twice celebrates the luxury of the excesses of freedom. Reclining commemorates our freedom by allowing us to relax, like kings or queens.

Sing the Ma Nishtana together as a class:

מַה נִּשְׁתַּנָה הַלַָיְלָה הַזֶּה מִכָּל הַלֵּילוֹת?
שֶׁבְּכָל הַלֵּילוֹת אָנוּ אוֹכְלִין חָמֵץ וּמַצָּה. הַלַָיְלָה הַזֶּה כֻּלּוֹ מַצָּה.
שֶׁבְּכָל הַלֵּילוֹת אָנוּ אוֹכְלִין שְׁאָר יְרָקוֹת הַלַָיְלָה הַזֶּה מָרוֹר.
שֶׁבְּכָל הַלֵּילוֹת אֵין אָנוּ מַטְבִּילִין אֲפִילוּ פַּעַם אֶחָת. הַלַָיְלָה הַזֶּה שְׁתֵּי פְעָמִים.
שֶׁבְּכָל הַלֵּילוֹת אָנוּ אוֹכְלִין בֵּין יוֹשְׁבִין וּבֵין מְסֻבִּין. הַלַָיְלָה הַזֶּה כֻּלָּנוּ מְסֻבִּין.

For the ScratchJr Activity, students will be assigned partners, and each partner group will be assigned one of the four questions. One student in each pair will make an active scene using ScratchJr depicting what we do on Passover, and the other student will depict what we do on all other nights. After, two pairs will be put in a group, and each pair will examine the other pair's codes to decipher which scene is Passover and which depicts all other nights.

1. Assign students in pairs and assign each pair one of the four questions.

2. Have the students in each pair decide who will depict the Passover night and who will depict the normal night.

3. Open the ScratchJr app.

4. Click the plus sign to open a new project under "My Projects".

5. Each student will now depict their appropriate scene. The scene should be active; characters should move around the screen. For example, for groups depicting the fourth question, the Passover scene may show a chair tilting back to demonstrate reclining. The scene should repeat on a loop. This process should take about 10 minutes

TECH CIRCLE (10 MIN)

When all groups are finished, assign each pair to another pair. Students from the other pair can try to guess which scene is Passover and which depicts all other nights!

Lesson 12: 4 Choices Quiz Game Part 1

OVERVIEW

In this lesson, children will practice their knowledge of Pesach customs and the significance of the number four in Seder.

ACTIVITIES

- Number 4 Reflection (5 minutes)
- Pesach Quiz Game Planning (15 minutes)
- Tech Circle: Game Design (15 minutes)
- Programming Activity (15 minutes)
- Wrap-up Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- List the four names of the holiday of Pesach
- List the names of the four mothers
- Identify what each of the four cups of wine represent
- List the four questions of the Ma Nishtana

POWERFUL IDEAS FROM COMPUTER SCIENCE

☐ Design Process
☐ Algorithms
☐ Modularity

POWERFUL IDEAS FROM PESACH

☐ The importance of the number four in the Haggadah

SCRATCHJR CONCEPTS

☐ Start on tap
☐ Speed Block
☐ Messages with one color

NUMBER 4 REFLECTION (5 MIN)

In this 2 part challenge, children will have the chance to reflect on all they've learned about the significance of the number four in the Haggadah. In your opening discussion, encourage children to recall facts and details from the following topics:

- The four names to the holiday of Pesach.
- The names of the four mothers
- The significance of the 4 cups of wine represent.
- The four questions of the Ma Nishtana

Remind them of the significance of retelling the story of Pesach, and explain that they'll be making projects to help others learn and remember the details of the story.

PESACH QUIZ GAME PLANNING (15 MIN)

Have children work alone or in pairs to paper-plan a quiz game with a trivia question about a theme (e.g. which is not one of the four mothers' names?), and 4 multiple choice answers. Children will use the Start on Tap feature to make trivia answers interactive.

TECH CIRCLE: GAME DESIGN (15 MIN)

Teachers can begin this conversation by brainstorming elements of familiar game (e.g. rules, obstacles, players, a goal). Write down their ideas somewhere in the classroom so children can refer to this list as they plan their own games.

Designing Games in ScratchJr:
Children can interact with ScratchJr and each other while creating and/or playing interactive games. The app can be used to create a quiz game with interactive trivia answers. Children can make questions interactive through tapping or dragging them to a certain spot on the screen. While children use the iPad as a tool for the game, there should also be some off-screen component (e.g. planning trivia questions ahead of time, designing interactions on paper).

Quiz Game Example Video (0:00 - 0:25): https://www.youtube.com/watch?v=t4gcIoutc6I
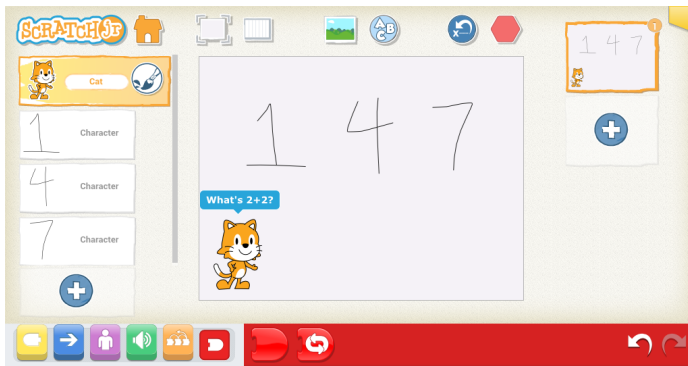
Making Buttons:

Buttons are a this useful game mechanic that can allow for interactivity in games. You might want to demonstrate for students how to make a button in ScratchJr using Start on Tap and Messages.

Create a several "button" character and use the Start on Tap block to program it. When tapped, the button can send a message to another character (e.g. the cat) so that it reacts in some way. For example, a button with a right arrow (-->) might send a message to the cat to move to the right.

PROGRAMMING ACTIVITY (15 MIN)

Allow children free time to translate their written plans into ScratchJr projects.

WRAP-UP ACTIVITY (10 MIN)

Gather into a closing circle. Remind children that although they may have more work to do on their games, they will have more time to work on this project. Discuss what they plan to add to their games, any issues that arose, and how people solved them.

Lesson 13: 4 Choices Quiz Game Part 2

OVERVIEW

In this lesson, children will continue building and programming their quiz game from Lesson 12.

ACTIVITIES

- Opening Activity (10 minutes)
- Programming the Pesach Quiz Game (35 minutes)
- Game Arcade (15 minutes)

STUDENTS WILL BE ABLE TO...

- List the four names of the holiday of Pesach
- List the names of the four mothers
- Identify what each of the four cups of wine represent
- List the four questions of the Ma Nishtana

POWERFUL IDEAS FROM COMPUTER SCIENCE

- ☐ Design Process
- ☐ Algorithms
- ☐ Modularity

POWERFUL IDEAS FROM PESACH

- ☐ The importance of the number four in Pesach

SCRATCHJR CONCEPTS

- ☐ Start on tap
- ☐ Speed Block
- ☐ Messages with one color

Lesson 13: Activities

Opening Activity (10 minutes)

Remind children about the projects they started to teach the significance of the number four in the Haggadah. Pass out their game design plans and discuss the following themes they were inspired by for their questions.

- The four names to the holiday of Pesach.
- The names of the four mothers
- The significance of the 4 cups of wine represent.
- The four questions of the Ma Nishtana

If applicable, also remind children of any debugging strategies that they might benefit from, that came out of the the previous lesson's meeting. Refer to lesson 12 for mechanics of game functions.

Programming the Pesach Quiz Game (35 minutes)

Allow children to work with their same tablets (and partners, if paired) to finish and their pesach quiz game. Remind them to test their programs as they work to make it easier to find bugs.

Game Arcade (15 minutes)

Allow children to take time to play each other's games in an arcade-style activity where children move around the room and play each other's projects. They've worked hard, they should enjoy the fun! Time permitting, you can end with a tech circle to explore how others may have approached the assignment differently.

Theme 4:
The Four Children in Us

Lesson 14: The Four Children and the Haggadah

OVERVIEW

Students will self-identify with one of the four children. They will be able to explain that there are various approaches in teaching the Haggadah depending on what type of child is being taught the approach needs to be tailored towards him or her. They will also learn how to use messages and create a scene in Scratch Jr.

ACTIVITIES

- Introduce the Four Children (20 minutes)
- The Four Children (30 minutes)
- Wrap-up Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- Learn who each of the four children are and identify each child based on the questions they ask

POWERFUL IDEAS FROM COMPUTER SCIENCE

☐ Design process

POWERFUL IDEAS FROM PESACH

☐ The Four Children

SCRATCHJR CONCEPTS

☐ Messaging

INTRODUCE THE FOUR CHILDREN (20 MIN)

If it hasn't already been covered, explain to students that there is one more very important example of the number four in Pesach to cover. Ask if anyone can guess what it is. Then, ask if anyone can guess any of the children.

To go further into the personalities of and differences between each child, explore the Haggadah's writing on the 4 children provided below (translation and questions credited to Sepharia: https://www.sefaria.org/sheets/114370?lang=bi):

הגדה של פסח - ארבעה בנים

ברוך המקום, ברוך הוא. ברוך שנתן תורה לעמו ישראל, ברוך הוא. כנגד ארבעה בנים דברה תורה: אחד חכם, ואחד רשע, ואחד תם, ואחד שאינו יודע לשאול. חכם מה הוא אומר? 'מה העדות והחקים והמשפטים אשר צוה ה' אלוהינו אתכם?' (דברים ו:כ) ואף אתה אמר לו כהלכות הפסח: 'אין מפטירין אחר הפסח אפיקומן.' רשע מה הוא אומר? 'מה העבודה הזאת לכם?' (שמות יב:כו) ולכם–ולא לו. ולפי שהוציא את עצמו מן הכלל, כפר בעקר. ואף אתה הקהה את שניו ואמר לו: 'בעבור זה עשה ה' לי בצאתי ממצרים,' (שמות יג:ח) לי–ולא לו. אילו היה שם, לא היה נגאל. תם מה הוא אומר: 'מה זאת? ואמרת אליו: 'בחזק יד הוציאנו ה' ממצרים, מבית עבדים.'' (שמות יג:ח) ושאינו יודע לשאול– את פתח לו, שנאמר: 'והגדת לבנך ביום ההוא לאמר, 'בעבור זה עשה ה' לי בצאתי ממצרים.'' (שמות יג:ח)

Blessed is God, blessed be Adonai! Blessed is God who gave the Torah to Adonai's people Israel, blessed be Adonai! Concerning four sons, the Torah speaks: One is wise, one is wicked, one is simple and one does not know how to ask. The wise one- what does he say? "What are the testimonies, the statues and the laws which the Lord, our God, has commanded you?" (Deuteronomy 6:20-21) You, in turn, shall instruct him in the laws of the Pesach offering: one may not eat dessert after the Pesach offering. The wicked one- what does he say? "What is this service to you?!" He says "to you," thereby excluding himself. By excluding himself, he denies the basic principle of our faith. Therefore you should blunt his teeth and say to him: "It is because of this that the Lord did [all these miracles] for me when I left Egypt"; "for me"- but not for him! Had he been there, he would not have been redeemed! (Exodus 12:26-27) The simple one- what does he say? "What is this?" Tell him: "With a strong hand did the Lord take us out of Egypt, from the house of bondage." (Exodus 13:14) As for the one who does not know how to ask- you must prompt him, as it says: "You shall tell your child on that day: 'It is because of this that the Lord did [all these miracles] for me when I left Egypt." (Exodus 12:26-27) [Translation from The Nechama Leibowitz Haggadah]

Suggested Discussion Questions:

1. What does this text imply about different methods of education?

2. How do we refrain from discriminating when educating different populations of learners?

3. Why do we introduce the four sons by praising God? What educational principles can we learn from this?

SCRATCHJR ACTIVITY: THE FOUR CHILDREN (30 MIN)

Each student will create a project about the four children according to the Haggadah. Invite students to make a program that teaches the Haggadah's understanding of the four children. The project should include a creative representation of each child (e.g. using humans, animals, or original characters). Each child must be programmed to ask the question the Haggadah attributes to them (e.g. the wise child should ask, "What are the testimonies, the statues and the laws which the Lord, our God, has commanded you?"). They can use Say blocks or Sound Recording blocks to program the asking. You can encourage children to include the biblical verse they are citing, and/or the response that the Haggadah suggests. Use Messages to create dialogue between characters that are asking and answering questions.

WRAP-UP ACTIVITY (10 MIN)

After all students are done, have a museum-style activity where children move around the room and play each other's projects. They will explore how others may have approached the assignment differently.

Lesson 15: Redefining the 4 Children through Issues Important to Us

OVERVIEW

Students will think about the four children as four possible stances one can take in any situation.

For example, if bullying occurs the "wicked" child might be the one who joins in, the "simple" child might be the one who is a bystander, the "wise" child might be the one who is an upstander and intervenes and the "child who doesn't know how to ask" might be the child who laughs along not understanding that bullying is happening.

ACTIVITIES

- Where Can You See the Four Children (10 minutes)
- The Four Children in Our World (10 minutes)
- Important Topics and the Four Children (30 minutes)
- Wrap-up Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- Learn who each of the four children as possible stances they can take in different situations

POWERFUL IDEAS FROM COMPUTER SCIENCE

- ☐ Design process
- ☐ Control Structures
- ☐ Debugging

POWERFUL IDEAS FROM PESACH

- ☐ The Four Children in each of us

SCRATCHJR CONCEPTS

- ☐ Messaging with multiple colors

WHERE CAN YOU SEE THE FOUR CHILDREN? (10 MIN)

Explain that the four children are more than just characters we only have for Pesach. The four children can be found throughout the world, in everyone. Ask Students if they can think of any examples of seeing the four children in the world around them. When have they seen or heard of someone being wicked? Wise? Simple? Is there anyone in their life who is too young to ask? What would a bully be? A rabbi? What would different children have to say about different topics, like whether we should go to school or whether we should share?

THE FOUR CHILDREN IN OUR WORLD (10 MIN)

Introduce the idea that the four children don't simply have to be four children asking questions about the Exodus story around a Seder Table, but that many Jews have used the four children as a way of exploring different responses to issues that concern us today.

For examples and ideas, see below some suggested conversation guidelines from the American Jewish World Service: https://ajws.org/who-we-are/resources/holiday-resources/passover/global-justice-haggadah/four-children-teaching-next-generation/

"At Pesach each year, we read the story of our ancestors' pursuit of liberation from oppression. When confronting this history, how do we answer our children when they ask us how to pursue justice in our time?

What does the activist child ask?
"The Torah tells me, 'Justice, justice you shall pursue,' but how can I pursue justice?"

Empower her always to seek pathways to advocate for the vulnerable. As Proverbs teaches, "Speak up for the mute, for the rights of the unfortunate. Speak up, judge righteously, champion the poor and the needy."

What does the skeptical child ask?
"How can I solve problems of such enormity?"

Encourage him by explaining that he need not solve the problems, he must only do what he is capable of doing. As we read in Pirkei Avot—The Ethics of Our Ancestors, "It is not your responsibility to complete the work, but neither are you free to desist from it."

What does the indifferent child say?
"It's not my responsibility."

Persuade her that responsibility cannot be shirked. As Rabbi Abraham Joshua Heschel writes, "The opposite of good is not evil; the opposite of good is indifference. In a free society where terrible wrongs exist, some are guilty, but all are responsible."

And the uninformed child who does not know how to ask …

Prompt him to see himself as an inheritor of our people's legacy. As it says in Deuteronomy, "You must befriend the stranger, for you were strangers in the land of Egypt."

At this season of liberation, let us work toward the liberation of all people.

Let us respond to our children's questions with action and justice."

SCRATCHJR ACTIVITY: IMPORTANT TOPICS AND THE FOUR CHILDREN (30 MIN)

After discussing how we might use the idea of the four children in our lives, students can work to choose a topic important to them, such as environmentalism, hunger, or something else. Have students create a project in which they create a character (e.g. of themselves) to dialogue with one or more of the 4 children. How can you address your issue? How would the four children respond to a plea for help, and and what could you say to convince them? Returning to the example above the program could be a dialogue about an incident of bullying at school. The student creates a "wicked" child to dialogue with and explain the issue to.

Send Messages (15 min): Remind students that just as they can send notes to a friend in class, characters in ScratchJr can also send messages to one another. Remember, these are special messages that control when a character starts its programs. If students need a reminder, demonstrate an example of a character sending a message to another character. The start on message block can be used in place of the green flag block. Example Program:

SEND MESSAGES (15 min):

Discuss that just like we sent notes to a friend in class, characters in ScratchJr can also send messages to one another. These are special messages that control when a character starts its programs. Demonstrate an example of a character sending a message to another character. The start on message block can be used in place of the green flag block.
Example Program:
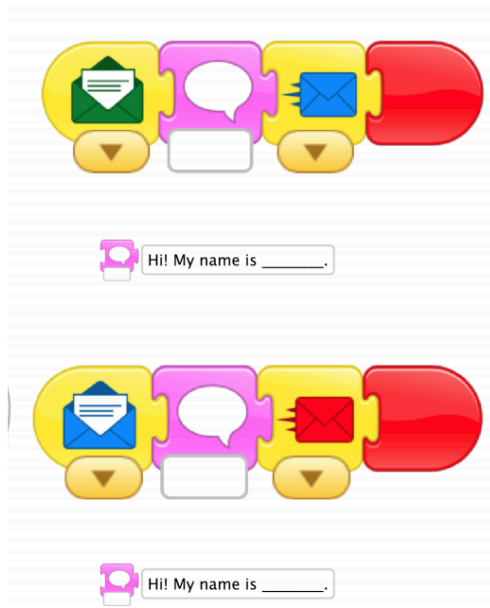
Guiding question: If I start my character with the orange start on message block, what color do you think the send message block needs to be? Why? While children work they may need to debug the color of the messages being sent and received.

In addition, programs can start with the start on bump block. This block only starts a character's program when that character is "bumped" by another character.

WRAP-UP ACTIVITY (10 MIN)

Children share their projects. If children notice bugs in their own or each other's projects, encourage a conversation where children use kind language to point out possible solutions to the bug

Lesson 16: The Four Children in Me

OVERVIEW

Students will understand that each of us might be wise in some aspects of our lives and simple in others, e.g. depending on the subject matter.

ACTIVITIES

- Can You See the Four Children in You? (10 minutes)
- The Four Children in Our Lives (10 minutes)
- The Four Children in Me (30 minutes)
- Wrap-up Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- Learn who each of the four children as possible stances they can take in different situations

POWERFUL IDEAS FROM COMPUTER SCIENCE

☐ Design process

POWERFUL IDEAS FROM PESACH

☐ The Four Children in each of us

SCRATCHJR CONCEPTS

☐ Messages
☐ Repeat Loops

Lesson 16: Activities

CAN YOU SEE THE FOUR CHILDREN IN YOU? (10 MIN)

Talk about the four children. Sing the Ballad of the Four Sons together.
Song: https://www.youtube.com/watch?v=1S4qWiHAJOc

Guiding Questions: How are they different from each other? Is it possible that we can be like each of the 4 children at different times in our lives?

THE FOUR CHILDREN IN OUR LIVES (10 MIN)

Remind children to reflect on all we have learned about the four children so far. Have students fold a piece of paper into 4 sections i.e. once lengthwise and once crosswise. At the top of each section, write out one of the 4 children's characteristics (wise, simple, wicked, doesn't know how to ask). Have students either write or draw a picture in each quadrant of a time in their life when they identified with that child. This will serve as the planning for their ScratchJr project.

SCRATCHJR ACTIVITY: THE FOUR CHILDREN IN ME (30 MIN)

Students will plan and build a project about how they embody the four children in different ways. They can think of hobbies, school subjects, sports, or anything they want to focus on. Their ScratchJr project should be based on their planning in the content activity. Their project should be 4 pages, a page for each of the 4 children. Students may also want to spend time customizing their characters using the paint editor. For a more detailed guide: https://www.scratchjr.org/learn/interface and see Lesson 1.

WRAP-UP ACTIVITY (10 MIN)

Students will share their projects with the group, telling how they embody the four children in their daily life and sharing their Scratch Jr. project.

Theme 5: Vehegadeta Lebincha - importance of retelling the story and explaining the order of the Seder to our children

Lesson 17: The Steps of the Seder

OVERVIEW

In this lesson, students will learn about the steps of the seder. They will also need to collaborate as a class or in smaller groups in order to create a multi tablet project that can be arranged to show the correct steps of the seder.

ACTIVITIES

- Ordering the Seder (15 minutes)
- Coding Seder Steps (35 minutes)
- Wrap-up Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- Identify the steps of the seder

POWERFUL IDEAS FROM COMPUTER SCIENCE

☐ Algorithms
☐ Modularity

POWERFUL IDEAS FROM PESACH

☐ Ordering the Seder

SCRATCHJR CONCEPTS

☐ Wait Block
☐ Start on Bump
☐ Message Sending
☐ Start on Tap
☐ Stop Block

ORDERING THE SEDER (15 MIN)

סֵדֶר	seder	order

Print out pictures representing each step of the Seder, according to the song: https://www.youtube.com/watch?v=FHrRJVjQCMw. Each image should have a picture of food.

נִרְצָה	הַלֵּל	בָּרֵךְ	צָפוּן	שֻׁלְחָן עוֹרֵךְ	כּוֹרֵךְ	מָרוֹר

מוֹצִיא מַצָּה	רָחְצָה	מַגִּיד	יַ֫חַץ	כַּרְפַּס	וּרְחַץ	קַדֵּשׁ

Play the song for the students a couple times. Then, distribute the pictures. Each student will be given one image of food. Task students with putting themselves in the correct order. For an added challenge, have students do it silently!

If children like this activity, you can also use it during other lessons as a quick way to practice the seder during transitions (e.g. giving children roles of the seder and have them line up in order when going out of the classroom).

SCRATCHJR ACTIVITY: CODING SEDER STEPS (35 MIN)

Each child will be in charge of one step of the seder. You may choose to let students keep the picture of their step from the previous activity and use it as the basis of their program. They will have to create a scene in which the character carries out that step of the seder. Remind children of all the blocks they have learned so far that they can use in their projects:

- Wait Block
- Start on Bump
- Message Sending
- Start on Tap
- Stop Block

When everyone is done, have children line up their tablets side by side in the order that the Seder occurs. For an added challenge, have students experiment with the wait time blocks so that their code automatically begins when the previous step ends.

WRAP-UP ACTIVITY (10 MIN)

Challenge students to repeat the steps of a seder from memory! Debrief on what was challenging or easy about creating their programs.

Lesson 18: What is the Afikoman?

OVERVIEW

In this lesson, students will learn about the purpose of the Afikoman in the Seder, as well as the customs associated with it. They will code a scene in which a child searches for the Afikomen. They can simulate finding it by either making it invisible and having it appear, or having a character walk into a room on another page with the Afikomen in it. After finding it, the child will run to his/her friend to tell them where the Afikomen is hidden. They will run to their friend forever until they reach them, and will stop (with the stop block) on bump. After the friend is bumped, the friend will start jumping up and down in excitement.

ACTIVITIES

- Introduce the Afikoman (5 minutes)
- Stop! Using the Stop Block (5 minutes)
- Food is Symbolic in Passover (10 minutes)
- I found the Afikoman! (30 minutes)
- Tech Circle (10 minutes)

STUDENTS WILL BE ABLE TO...

- Explain that we eat the Afikoman since we can't eat the Paschal lamb

POWERFUL IDEAS FROM COMPUTER SCIENCE

- ☐ Algorithms
- ☐ Control Structures
- ☐ Debugging
- ☐ Design Process
- ☐ Representation

POWERFUL IDEAS FROM PESACH

- ☐ Retelling the Story of Pesach

SCRATCHJR CONCEPTS

- ☐ Nested Repeats
- ☐ Message Sending
- ☐ Start on Bump
- ☐ Stop Block

Lesson 18: Activities

INTRODUCE THE AFIKOMAN (5 MIN)

Introduce lesson content and activity. Explain that we eat the Afikoman to symbolize eating the Paschal lamb, which we used to eat to remember the lamb sacrificed by the Jewish people in Egypt so that death would "Pass over" their homes and not slay their first born sons. Then, explain that in some traditions, the head of the table hides the Afikoman during the Seder so that afterwards, children can try to find it. Does anyone remember doing a Passover activity like that with their family? Does anyone remember doing anything else with the Afikoman?

STOP! USING THE STOP BLOCK (5 MIN)

The teacher should remind the students how to use the Stop block in ScratchJr. The stop block is used to terminate all programs running for a particular character, except the program that contains the stop block itself. (Refer to Lesson 2 for a reminder)

FOOD IS SYMBOLIC IN PASSOVER (10 MIN)

At this point, students have learned a lot about the different foods of Passover and what they symbolize. Students should draw pictures of some of the foods they have learned about so far, including the Afikoman, and then draw a picture that matches what the food represents. Have a small competition to see who can remember and symbolize the most foods.

Examples:

(lamb shank)   (Afikoman)   (Karpas)

SCRATCHJR ACTIVITY: I FOUND THE AFIKOMAN! (30 MIN)

1. Open the ScratchJr app.

2. Click the plus sign to open a new project under "My Projects".

3. Each student will program a child searching for the Afikoman. They can set up the details of the scene however they would like, but the child must find the Afikoman hidden somewhere. This can be done by making it hide and suddenly appear, having the child walk into a room with the Afikoman in it on another page, or something else.

4. After finding it, what should the child? For example, should they run back quickly and stop when they bump into their friends? Should they jump up and down? Should they shout out to their family? Children can be creative here!

5. When the other characters hear the news, they may also react in a certain way. Encourage children to create complex programs and stories using Messages, Start on Bump, Speed block, Stop block, and nested repeat loops.

TECH CIRCLE (10 MIN)

Talk about the coding experience. What were some things that were easy? What was hard? Is there anything that children didn't understand as well as other things? What other directions could we take this project? Create a discussion.

Lesson 19: Retelling the Story of Pesach Part 1

OVERVIEW

In this lesson, students learn the importance of communicating effectively to an audience. Students engage in this learning by retelling a story to their peers and "edit" their story when their audience is confused and needs more clarification. Students connect this idea to when a ScratchJr program does not turn out the way they had expected. The process of figuring out what went wrong and how to fix things is called debugging

ACTIVITIES

- Introduce Collaborative ScratchJr Projects (20 minutes)
- The Story of Pesach (35 minutes)
- Wrap-up Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- Retell the Story of Pesach

POWERFUL IDEAS FROM COMPUTER SCIENCE

- ☐ Algorithms
- ☐ Control Structures
- ☐ Debugging
- ☐ Design Process
- ☐ Hardware/software
- ☐ Representation

POWERFUL IDEAS FROM PESACH

- ☐ Retelling the Story of Pesach

SCRATCHJR CONCEPTS

- ☐ Start on Bump
- ☐ Message Sending
- ☐ Nested repeats
- ☐ Stop Block
- ☐ Naming and Sharing Projects

INTRODUCE COLLABORATIVE SCRATCHJR PROJECTS (20 MIN)

When starting out, children often use one tablet to play with ScratchJr. With more complex programs and more iPads, ScratchJr can be used to make a multi-tablet collaborative project, an interactive game, or both!

Multi-Tablet Stories
Children can program and create imaginative stories using ScratchJr by snapping together graphical programming blocks to make their characters come alive. However, their creativity is limited to the four pages on a single screen. With a multi-tablet collaborative project, the images and movements can span across multiple screens to make their story even more dynamic. The characters on each tablet can be programmed to play at the same time or even staggered to make them appear to move between tablets. Multi-tablet ScratchJr projects can have one overall theme (e.g. a cultural holiday or dance) or tell an elaborate story (e.g. a favorite children's book or a memorable event). Anything can come to life with ScratchJr!

Example video: Light Around the World: Lunar New Year

Students will work together to plan a collaborative project that repeats the story of passover again and again (see SJr lesson 6). Students should choose one part of the story to work on for their contribution (e.g. the 4 questions, 4 cups of wine, etc). They can build multiple pages to represent their ideas and teach a friend about each one.

SCRATCHJR ACTIVITY: THE STORY OF PESACH (30 MIN)

Invite your students to create a Multi-Tablet Story using ScratchJr

1. Work with your students to plan a multi-tablet story of Pesach.
    1. What images and/or scenarios come to mind when they think about Pesach?
    2. What activities happened in the story of Pesach, and where do they happen?
    3. Who or what is involved in different parts of the story?
    4. Are there particular sounds or music that help us tell the story?

2. Have students pick 4-5 ideas from their list that they think would best represent the story in a creative, playful way. They can of course incorporate more ideas, but it's best to focus on 4-5 things that they can focus on coding uniquely.

3. Have students plan out their design by drawing a sketch/map, making a bulleted list, etc.
    1. How many tablets will their project have? How will the use of multiple tablets enhance the overall effect of their project?
    2. How will they arrange the tablets? Would all of the tablets start simultaneously on the green flag?
    3. What characters will they have in their project? Will they create any new characters that do not currently exist in ScratchJr?
    4. What ScratchJr blocks might they use in their program?
    5. What backgrounds might they use? How many pages will the program have?

4. In small groups or individually, have students take a break from planning to create their characters on one master tablet with teachers. This is so if they modify an existing character or create a whole new character, they won't have to recreate it on each tablet, saving them lots of time and effort!
    1. If they know that a particular code will be used for multiple tablets, they can create the code for that character so that it can be shared with the other tablets.

WRAP-UP ACTIVITY (10 MIN)

At the end of this activity, you should share the projects from the master tablet with all characters to all devices. Some teachers may wish to do this after class, but you can also invite the children to help you with this.

See below the instructions for sharing projects across multiple devices. And check out https://www.scratchjr.org/learn/tips/share-projects for more information on sharing.

- Make sure both the Sending and Receiving devices are:
    ○ turned on
    ○ connected to the internet
    ○ enabled to receive emails/AirDrops
    ○ pre-loaded with the ScratchJr app

- On the Sending device, open the project you want to share. Tap the yellow rectangle in the top right corner of the screen to see the Project Information Screen
- Type a specific name for this project (e.g. "Amy's Pesach Story"). If children are still developing their typing skills, you can invite them to type something simple like their own name, and you can rename the project when you receive it. Share the project to your receiving device using your preferred share method (AirDrop or email)

- On the Receiving device, open ScratchJr. You should see your newly shared project in your project library, with a blue ribbon to show it hasn't been opened yet.

See more instructions for Renaming projects: http://scratchjr.org/learn/tips/manage-projects

If sharing projects is not available on your devices, some alternative ideas include:
- Collect all paper plans and create a physical character library that children can take pictures of on their devices
- All agree ahead of time on which characters from the ScratchJr library they will use for all tablets

Lesson 20: Retelling the Story of Pesach Part 2

OVERVIEW

Students will be able to explain why it is important to read the Haggadah and "tell" over the story of Pesach (tradition of passing over the story, mitzvot, and customs to the next generation)

In this lesson, students learn the importance of communicating effectively to an audience. Students engage in this learning by retelling a story to their peers and "edit" their story when their audience is confused and needs more clarification. Students connect this idea to when a ScratchJr program does not turn out the way they had expected. The process of figuring out what went wrong and how to fix things is called debugging

ACTIVITIES

- Technology Circle (10 minutes)
- Retelling the Story (30 minutes)
- Wrap-up Activity (10 minutes)

STUDENTS WILL BE ABLE TO...

- Explain the importance of reading the Haggadah and telling the story of Pesach

POWERFUL IDEAS FROM COMPUTER SCIENCE

- ☐ Algorithms
- ☐ Control Structures
- ☐ Debugging
- ☐ Design Process
- ☐ Hardware/software
- ☐ Representation

POWERFUL IDEAS FROM PESACH

- ☐ Retelling our history
- ☐ The importance of remembering the past

SCRATCHJR CONCEPTS

- ☐ Start on Bump
- ☐ Message Sending
- ☐ Nested repeats
- ☐ Stop Block
- ☐ Naming and Sharing Projects
- ☐ Collaborative projects

Lesson 20: Activities

TECHNOLOGY CIRCLE (10 MIN)

Remind children of the activity they started in the previous lesson by returning their same tablets to them along with any planning materials they were using.

Have groups share their ideas with the class. Open up the door for discussion and suggestions for how each group might improve or enhance the project. Encourage students to brainstorm potential difficulties that may arise with each project, and to ask questions.

SCRATCHJR ACTIVITY: RETELLING THE STORY (30 MIN)

Students will work together to create a collaborative project. Using projects that they started in the previous lesson, children should combine their projects in sequential order to tell the story start to finish, and repeat again and again.

Continuing from the project they created during the previous lesson:

1. Share the master character project with the other tablets using either AirDrop or email.
    1. It may be helpful to number the tablets in their design plan (i.e. Tablet #1, Tablet #2, etc.). Once they share the project with the other tablets, they can name each project with that same number to keep it consistent.

2. If they are working in a small group, divide tablets or story pages among the group so that everyone has a role.

3. Have them program the rest of their project on the other tablets.

4. After they finish each page, have them test it out by running the programs in presentation mode. They may need to go back and adjust the codes, especially their stop and wait blocks.

5. Many trial runs later... have them run their whole program together and make any final adjustments.

6. Congratulate your students, they have successfully created a multi-tablet ScratchJr story of Pesach!

WRAP-UP ACTIVITY (10 MIN)

Students will all present their projects to the rest of the class, and potentially other classes / families, depending on feasibility. Students will explain their final projects, what they depict about Pesach and why these things are important, and then play the projects for the rest of the class.

OPTIONAL: COMMUNITY OPEN HOUSE (25 MIN)

When all children's projects are ready, invite family, friends, and community members to come and hear their children retell the story of Pesach in code. Invite children to sing Pesach songs, share facts they've learned about the Haggadah and number four, and recite songs and blessings of the Pesach seder. They can share what was easy or difficult about the project, what they would have done if they had more time, etc. Families and friends can join in the fun by interacting with the ScratchJr projects and learning how children retold their Pesach stories. You can culminate or extend this activity by holding a class seder or ending with a community song.