MackinMaker
GAMIFIED KIT PK-2

Educator Overview

Welcome to Your MackinMaker Gamified Kit!

We are excited to share these products and resources with you as we all strive to engage more student learning through making.

MackinMaker Gamified Kits are engaging, flexible, and easy to use in a variety of situations. Your kit includes a selection of **products**, corresponding **challenge cards**, and even two gamified ways to track your students' progress—**MackinMaker Gameboard** and **MackinMaker Bingo**. The kit can be used in small groups, traditional classrooms, and libraries –even individually.

In addition to the products included in the kit, we have recommended a list of **"suggested making materials"** that we have found may be helpful to have on hand while students complete challenges. This is just a suggested list, and none of the materials are required to complete any of the challenges.

You can easily integrate the kit into your class, group, or content area by choosing the subject-aligned extended challenges or the maker categories. In fact, the last two pages of this overview guide include a **Challenge Overview Matrix** and a **Standards and Subject Alignment Matrix** based on the ISTE Standards. This will allow you to browse and choose the challenges for more targeted supplemental learning and practice.

No matter where you choose to start, you'll find your students digging in and engaging in their learning through the products and resources.

Getting Started

It couldn't be easier! Just follow these quick steps to launch students into making fast.

1. Unbox your **products** and choose your **MackinMaker Game**. Will your students play **MackinMaker Bingo** and/or track their progress with the **MackinMaker Gameboard**? Use the **"How to Use Our MackinMaker Games"** section of this Overview Guide to set up the game(s) your students will play.

2. Locate your **challenge cards** and pick your starting challenges. If you want to target specific content, use the **Challenge Overview Matrix** and/or the **Standards and Subject Alignment Matrix** (last pages of this guide) to help choose where to start.

3. Use the *Quick Start* and *Materials* sections, found on the back of each **challenge card**, to guide your setup.

4. Start making with your students! These are open-ended making challenges that we hope will give your students space to pursue their interests. The importance lies in the process. If students need a bit more direction, look at *Hints and Tips*, also located on the back of each **challenge card**.

5. When they complete a challenge, continue to use your MackinMaker Games to further engage your students and keep them making all year long.

What's in the Kit?

- ✓ Products (list on right)
- ✓ 1 Deck of Challenge Cards
- ✓ 1 MackinMaker Gameboard
- ✓ 4 Pads of Paper Robot Game Pieces
- ✓ 1 Educator Overview (this packet)
- ✓ MackinMaker Bingo Cards

Suggested Making Materials

- ☐ Play-Doh
- ☐ Multi-colored Paper, Poster, Cardstock
- ☐ Various tapes: Masking, Scotch, Duct
- ☐ Scissors
- ☐ Aluminum foil
- ☐ Hole punch
- ☐ Washable marker pack and other coloring supplies
- ☐ Ribbon, string, and other crafty items
- ☐ Recycled cardboard boxes, containers, cups, plastic bottles

Gamified Kit PK-2 Products

PRODUCT NAME		QTY
	3DuxDesign GOBOX Classroom Set	1
	KEVA Planks Brain Builders Junior	4
	K'NEX Education Classroom Connection	1
	Squishy Circuits Deluxe Kit	1
	Duracell Coppertop Alkaline Battery, AA	1
	Cubetto Playset	1

Categories

Making is all about developing new skills and mindsets. It's also about collaboration, human-centered design, and learning from our mistakes. To this end, we've organized challenges into five real-world categories to give you another way to help your students learn these 21st-century maker mindsets.

T
TINKER

Tinker
Learn through playful exploration.

S
SKILL-UP

Skill-Up
Complete activities to hone skills.

D
DESIGN

Design
Dig into design thinking and design things with purpose.

G
GLOBAL

Global
Work to solve real-world problems and help others.

I
INNOVATOR

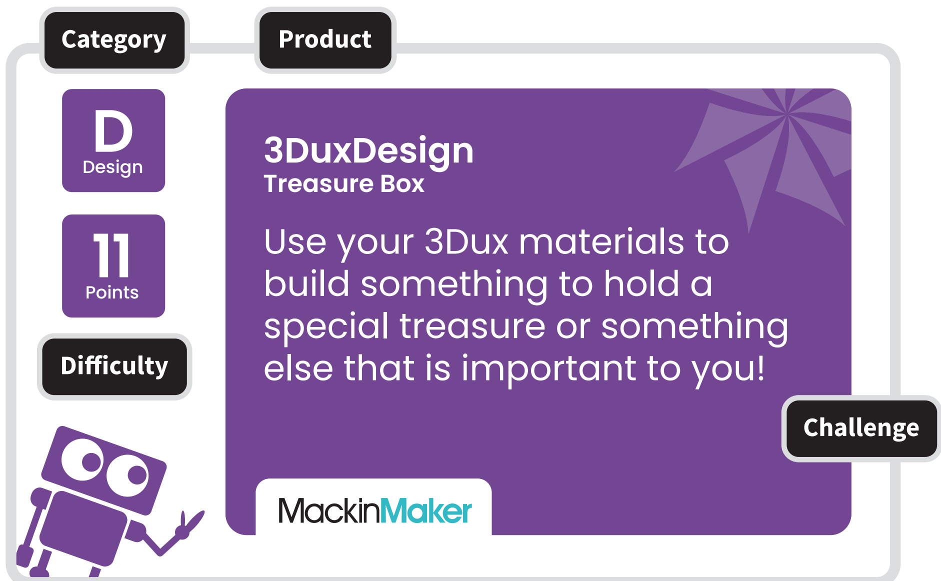
Innovator
Create a "uniquely yours" innovation.

Challenge Cards Unpacked

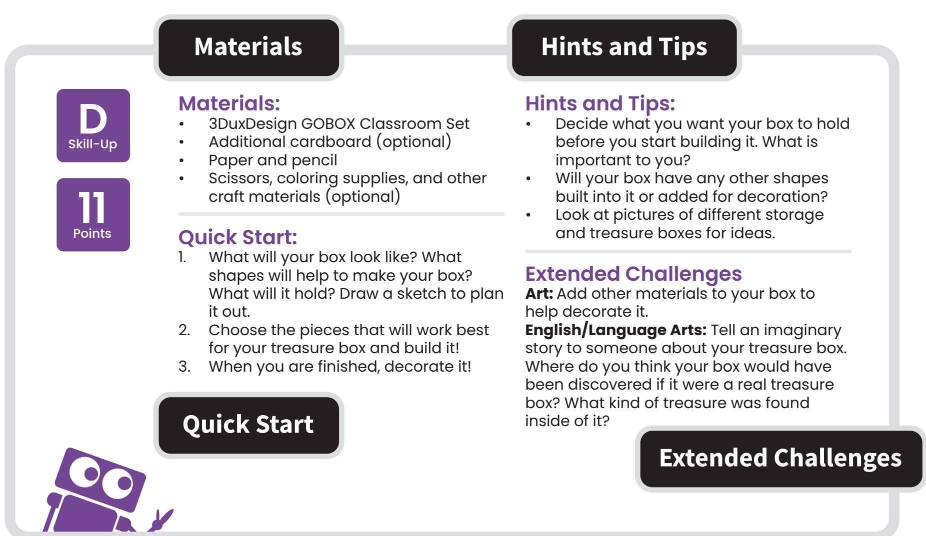
At the core of your MackinMaker Gamified Kit are the challenge cards. Each challenge card is created to be helpful for educators to use with students as it provides a quick overview of the challenge, the materials needed, and how to set each one up. For our younger makers in grades PK-2, we strongly recommend reading aloud the challenge to students and closely monitoring and/or assisting your students while they are making.

To start, reading through the cards to get an overview of all the different challenges can be helpful.

On the **front** of each card you will find the challenge, the category designation, the difficulty/point level, and the product that you will be using.



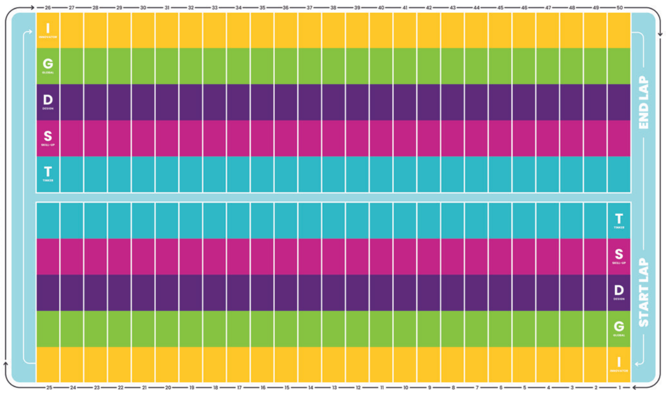
On the **back** of each challenge card you will find a quick start list of steps (these will be useful to teachers and students alike), a materials list, as well as optional extended challenges tied to different subject areas.



How to Use The MackinMaker Games

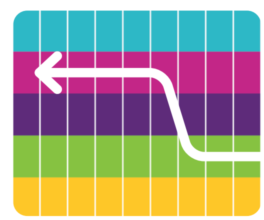
Not only are hands-on projects powerful learning experiences, they are also fun! To add to this fun side of making—and also to help you motivate your students and track their progress—we've created two games for your students to enjoy as they work through the challenge cards.

Option 1: The MackinMaker Gameboard

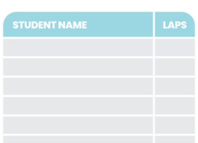


To use this gameboard, simply hang it on the wall and have students write their names on their own paper robot game pieces. Once they stick their game piece on the starting line, they are ready for their first challenge!

1. Students complete a challenge card in one of the five categories and then move their game piece the appropriate number of spaces (the points shown on the card) in the lane that correlates to the category color.

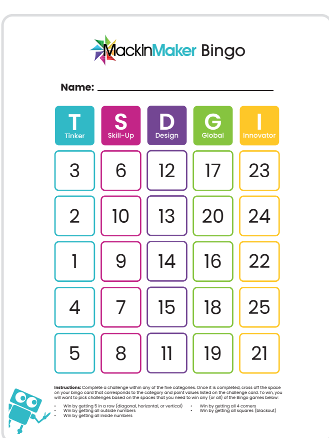


2. Students continue to choose and complete new challenges of various points and categories as they move forward around the gameboard. They can complete the challenges in any order and category. Each time they complete a challenge, they simply move the appropriate number of spaces and jump to the corresponding category lane as needed (see picture).



3. Use the lap tracker to the left of the gameboard to track the number of times students make it around the board from start to finish. Have students race each other to see how many laps they can complete throughout the school year or set a specific number of laps that you would like students to complete throughout the year! The game can last as long as you would like!

Option 2: MackinMaker Bingo



If you'd rather students approach their learning on an individual level, you may choose to have them check off the challenges that they have completed with a good old-fashioned game of Bingo.

Give students their own unique Bingo card and have students pick challenges based on the points that they need to win any of the Bingo games below that you choose:

a. Win by getting 5 in a row (diagonal, horizontal, or vertical)
b. Win by getting all outside numbers
c. Win by getting all inside numbers
d. Win by getting all 4 corners
e. Win by getting all squares (blackout)

Challenge Overview Matrix

Use the matrix below to help you choose where to start. You can pick a category, product, or extended challenge related to a content area to focus on. If you are using the MackinMaker Gameboard or MackinMaker Bingo to track your students' progress, you can choose (or let them choose) by point value too—see the section "How to Use The MackinMaker Games" for more information.

	T TINKER	**S** SKILL-UP	**D** DESIGN	**G** GLOBAL	**I** INNOVATOR
3DuxDesign	**Community Building** *Subject Tie-In(s):* Art Social Studies English / Language Arts POINTS 2	**Building a Home** *Subject Tie-In(s):* Science English/Language Arts POINTS 7	**Treasure Box** *Subject Tie-In(s):* Art English/Language Arts POINTS 11	**Spotlight on Seasons** *Subject Tie-In(s):* English/Language Arts Social Studies POINTS 18	**Changing Spaces** *Subject Tie-In(s):* Social Studies English/Language Arts POINTS 23
KEVA Planks	**Ramp Up** *Subject Tie-In(s):* Science Social Studies POINTS 1	**Name It!** *Subject Tie-In(s):* English/Language Arts Social Studies POINTS 6	**Patterns With KEVA Planks** *Subject Tie-In(s):* Art Math POINTS 12	**Lovely Library** *Subject Tie-In(s):* English/Language Arts Science POINTS 16	**Tallest Tower** *Subject Tie-In(s):* Science POINTS 21
K'NEX	**Create a K'NEX Creature** *Subject Tie-In(s):* English/Language Arts Science POINTS 3	**Connect K'NEX** *Subject Tie-In(s):* Math Art POINTS 8	**K'NEX Habitat** *Subject Tie-In(s):* English/Language Arts Social Studies POINTS 13	**Prototyping With K'NEX** *Subject Tie-In(s):* Social Studies, English/Language Arts POINTS 17	**K'NEX Spins** *Subject Tie-In(s):* Science Math POINTS 24
Squishy Circuits	**Building a Circuit** *Subject Tie-In(s):* Science POINTS 5	**Switch Up to Skill-Up** *Subject Tie-In(s):* Science English/Language Arts POINTS 9	**Light-Up Pet** *Subject Tie-In(s):* English/Language Arts Art POINTS 15	**Fun Fake Food** *Subject Tie-In(s):* Science POINTS 20	**Squishy Landscape** *Subject Tie-In(s):* English/Language Arts Art POINTS 25
Cubetto Playset	**Lost and Found** *Subject Tie-In(s):* English/Language Arts Computer Science POINTS 4	**Desert Adventure** *Subject Tie-In(s):* English/Language Arts Computer Science POINTS 10	**Plant Parade** *Subject Tie-In(s):* Computer Science Science POINTS 14	**Apple Picking With Dragon** *Subject Tie-In(s):* Computer Science Math POINTS 19	**Story Time With Cubetto** *Subject Tie-In(s):* Math Science POINTS 22

Standards and Subject Alignment Matrix

If you are looking to integrate your MackinMaker Gamified Kit into your existing curriculum by content area or standards, look no further. Below we have noted standard alignment to the International Society of Technology Education (ISTE) Standards as well as created a quick way to reference what challenges and core products will work best in various subjects.

ISTE Student Standards Grades PK-2		3DuxDesign					KEVA Planks					K'NEX					Squishy Circuits					Cubetto Playset				
		COMMUNITY BUILDING	BUILDING A HOME	TREASURE BOX	SPOTLIGHT ON SEASONS	CHANGING SPACES	RAMP UP	NAME IT!	PATTERNS WITH KEVA PLANKS	LOVELY LIBRARY	TALLEST TOWER	CREATE A K'NEX CREATURE	CONNECT K'NEX	K'NEX HABITAT	PROTOTYPING WITH K'NEX	K'NEX SPINS	BUILDING A CIRCUIT	SWITCH UP TO SKILL-UP	LIGHT-UP PET	FUN FAKE FOOD	SQUISHY LANDSCAPE	LOST AND FOUND	DESERT ADVENTURE	PLANT PARADE	APPLE PICKING WITH DRAGON	STORY TIME WITH CUBETTO
1. EMPOWERED LEARNER	1C																×	×	×	×	×	×	×	×	×	×
	1D																					×	×	×	×	×
3. KNOWLEDGE CONSTRUCTOR	3A	×	×		×	×	×					×		×	×	×										×
	3D	×	×	×	×	×	×		×	×	×		×	×	×	×	×	×	×	×	×					×
4. INNOVATIVE DESIGNER	4A	×	×	×	×	×	×		×	×				×	×		×	×	×	×	×					
	4C	×	×	×	×	×	×		×	×	×		×	×	×	×	×	×	×	×	×	×	×	×	×	×
	4D	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
5. COMPUTATIONAL THINKER	5D																					×	×	×	×	×
6. CREATIVE COMMUNICATOR	6A	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×					
	6B	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×			×		×
7. GLOBAL COLLABORATOR	7C		×		×	×	×				×		×	×	×		×	×	×	×	×	×	×	×	×	×
	7D					×	×			×				×	×		×	×	×	×	×					
SUBJECT TIE-INS	ENGLISH / LANGUAGE ARTS	×	×	×	×	×		×		×		×		×	×			×	×		×	×	×			
	SOCIAL STUDIES	×			×	××	×	×						×	×											
	ART	×		×					×				×						×		×					
	SCIENCE		×				×		×	×	××	×				×	××	×		××				×		×
	MATH												×			×									×	×
	COMP. SCIENCE																					×	×	×	×	

Note: Not all ISTE Standards are noted in Matrix above because not all ISTE Standards are applicable for the MackinMaker Gamified Kit Challenges.

Acknowledgements

True to the philosophy of maker education, the creation and design of the MackinMaker Gamified Kits was an iterative process that was full of messy, failing-forward moments. There were many people that worked diligently to make these four wonderful kits a reality. We want to thank all of the teams at Mackin who were involved in content writing and kit design. We also want to give special thanks to a few of the educators listed below that were more heavily involved in this Gamified Kit creation. We are so proud of our results and are excited for students to engage in their learning through making.

Lindsay Simmons *(Mackin Educational Resources, Lead Content Writer)*

Lindsay Simmons, M.A., Professional Learning Specialist, has several years of experience working as an upper-elementary school teacher and has most recently served as the STEM Education Programming Manager for a science center in Pennsylvania. She has a Master's Degree in Art History with a Museum Studies Certificate and has a passion for learning about effective engagement strategies, in both design and learning. She enjoys utilizing STEM and maker education processes and tools to enhance student learning. She has written curriculum content for the Weisman Art Museum and Whitaker Center for Science and the Arts, and has assisted schools across the country integrate maker education into their buildings.

Mark Schreiber *(Design Case Consulting, Content Contributor)*

Stanford Fellow and founder of Design Case Consulting, Mark Schreiber knows hands-on education. With over 15 years in technology, engineering, digital fabrication, and design, Mark is well versed in the integration of STEAM into schools. Mark consults for Stanford's Graduate School of Education and the American School in Japan to help bring more design and innovation into classrooms worldwide. With Bachelor Degrees in Technology Education and Industrial Technology, and a Master's of Science in Construction, Technology, and Engineering Education, Mark is already an active member of the "maker generation." He is the owner and creative editor of the open-source "Design Case Curriculum," and a member of MIT's international FABlab network.

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- **Katie Moore**, Classroom Specialist

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