

Hands-On
Learning

Week 7

K

Kindergarten

Independent Study Packet



**Educational Activities
to Create, Problem Solve,
Move, and Have Fun**

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This Activity Packet is a collection of open-ended learning challenges that encourage your child to create, build, design, and move. For these activities, you will need materials like paper, tape, markers, and scissors. You will also need other materials, but feel free to substitute with what is around your home.

We recommend allowing your child to choose 2-3 activities per day. Each packet contains a selection of “choice boards,” and these can be used over

multiple days. You may also want to review the packet together and make a week long plan using the planner included, or your own.

Brain Breaks can be used throughout the week to support your child in moving their body when they need to take a break from focusing on academic work. The STEM Design Challenge: Plan, Reflect, Revise sheet can be used to help your child dig deeper into the open-ended learning challenges.

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WEEKLY PLANNER



Name: _____

Month: _____ Days: _____ - _____ Year: _____

MONDAY

Course activities:

To do list:

_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>

TUESDAY

Course activities:

To do list:

_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>

WEDNESDAY

Course activities:

To do list:

_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>

THURSDAY

Course activities:

To do list:

_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>

FRIDAY

Course activities:

To do list:

_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>

WEEKEND ACTIVITIES:

_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>

Brain Breaks

What are brain breaks? Young learners often struggle to stay focused for long periods of time. Brain breaks are short periods of time when we take a step away from the routine work we are doing. They are quick and effective ways to energize and refresh our thinking.

★ Research indicates that brain breaks improve concentration and relieve stress. They increase productivity and provide children with opportunities to develop their social skills and creativity through kinesthetic activities. They also boost brain function! Use these short brain breaks to help refocus before getting back to work.

- 1. Dance Party:** Put on some fun music and dance!
- 2. Keep It Up:** Get a beach ball and keep it from hitting the ground. Add an additional ball to make it even more fun!
- 3. Jump Counting:** Have your child count while jumping with each count. Challenge them by counting by twos, fives, or tens!
- 4. “Head, Shoulders, Knees, and Toes”:** Use a movement song like this one to get your child moving. For added fun, see how fast you can go! This is a great one for young learners.
- 5. Freeze Dance:** Similar to the Dance Party brain break, this one incorporates listening skills. When the music stops, your child must freeze and hold their position until the music begins again.
- 6. Physical Challenges:** Engage your child in the classic challenge of rubbing their belly, and patting their head. Another version to try is to grab your nose with your left hand, and grab your left ear with your right hand.

Brain Breaks

7. **Race in Place:** Have your child stand up and run in place. On your signal, your child will get back to work.
8. **Simon Says:** Play this oldie but goodie to see how well your child can follow specific directions...but only if Simon Says!
9. **Rock, Paper, Scissors:** Teach your child to play this fun, quick game and see who wins! Best out of three.

For another approach to brain breaks, try these:

- **Drawing or coloring**
- **Mental math:** Give a sequence of instructions for learners to follow while doing math in their head.
- **Invisible pictures:** Have your child draw an invisible picture in the air and try to guess what it is.
- **Story starters:** Begin a story for one minute and let your child finish the story on their own.

Name _____

Date _____

STEM Design Challenge: Plan, Reflect, Revise



Part 1: Plan

Directions: Create a plan for your STEM design challenge by drawing pictures or writing words in the space provided.

STEM Design Challenge: Plan, Reflect, Revise



Part 2: Reflect

Directions: Reflect on your STEM design challenge by drawing pictures or writing words in the space provided. Think about the following questions:

- What worked?
- What did you change?
- What did you learn?
- What are you still wondering?

Name _____

Date _____

STEM Design Challenge: Plan, Reflect, Revise



Part 3: Revise

Directions: Draw a picture and/or write words to show how you would change your design based on what you learned!

Whimsical Activity Choice Board

Directions: Choose one or more activities to complete at home.

Pretend to be a character
in your favorite book.



Find a family member
or a friend and give
each other "dream
assignments," like
"Dream about a
singing whale."
In the morning,
check in to see
if they did their
assignment.



If a bird lands
near your home,
ask them to
send a message
to a nearby
friend. Ask your
friend later if
they received it.



Go to any room of
the house, and give
the furniture a name.
Really try to select the
name that feels right.
Ask the furniture if
they like their name,
and some other
questions about
their life.



Choose a time of
day that is called
Bad Mood O'Clock.
It is when everyone
is usually in a low
mood. When Bad
Mood O'Clock strikes,
remind one another,
"It's Bad Mood O'Clock,"
drink water, and laugh.



Find two plants,
preferably one
indoors and one
outdoors, or each
in different rooms,
and imagine they
are penpals. Write
letters from one to
another throughout
the day, and read
them to them.



Movement Card Game



Our physical health is so important! Staying active not only promotes strong muscles and bones, it also helps with stress reduction, mental health, and even the quality of our sleep! Here is a fun at-home physical activity for the whole family to enjoy! Using simple materials, children will create a movement card game that the family can play together. Geared toward children in preschool through first grade, this activity is a great way to incorporate early reading and math skills while staying active! Your family will love putting their own spin on this fun and easy at-home game all about movement!

What You Need:

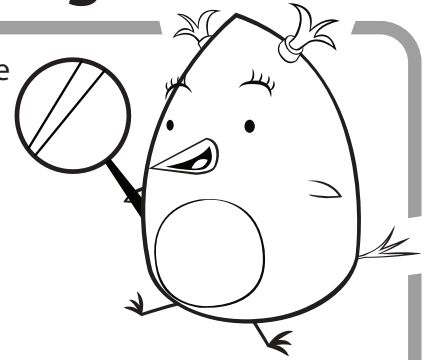
- Index cards or enough paper to make 20 small cards (about the size of a playing card)
- Markers

What You Do:

1. Using index cards or 10 small pieces of paper, write one movement on each card (e.g., jumping jacks, spins, hopping on one foot, touching toes, reaching for the sky, etc.).
2. Using 10 more index cards or pieces of paper, write the numbers 1–10 (one number per card).
3. Stack each set of cards (numbers and movements) next to each other facedown.
4. Invite your child to pick a card from each deck, then read the cards aloud.
5. Have all players stand up and complete the movement for the number of times specified (e.g., 8 jumping jacks).
6. Repeat with a new player choosing cards.
7. Play until you have gone through the entire deck at least one time.
8. Variation: Use a timer to see how many repetitions each player can complete in a given amount of time. For example, how many jumping jacks can each player complete in 30 seconds?

At-Home Scavenger Hunt for Young Learners

Directions: Explore your home and the area around your home to find the items listed below. Once you find the item, write a check mark next to it.



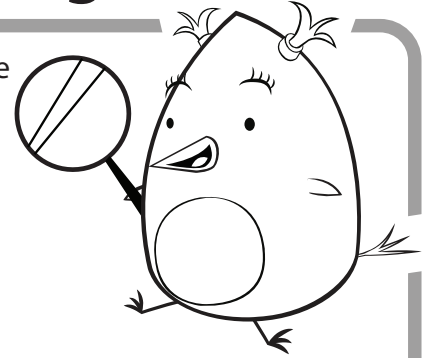
Inside

- Find something very soft.
- Find an animal in a book.
- Find a pair of matching socks.
- Find a photo of someone you love.
- Find a character eating in a book.
- Find someone being helpful in a book.
- Find a container that holds small things.
- Find two things that are green.
- Find an item that you can see yourself in.
- Find something that uses electricity.

What is your favorite item from the indoor list? Draw it below.

At-Home Scavenger Hunt for Young Learners

Directions: Explore your home and the area around your home to find the items listed below. Once you find the item, write a check mark next to it.



Outside

- | | |
|---|--|
| <input type="checkbox"/> Find a stick that is smaller than your hand. | <input type="checkbox"/> Find something that is heavy. |
| <input type="checkbox"/> Find something that smells good. | <input type="checkbox"/> Find something orange. |
| <input type="checkbox"/> Find something that is round. | <input type="checkbox"/> Find something that flies. |
| <input type="checkbox"/> Find a stick that is larger than your hand. | <input type="checkbox"/> Find something that crawls. |
| <input type="checkbox"/> Find something that needs sunlight to live. | |
| <input type="checkbox"/> Find something that helps people stay safe. | |

What is your favorite item from the outdoor list? Draw it below.

Building Brick Challenge: Build a Letter



Are you looking for interesting ways to teach your child the alphabet? With this activity, your child will create each letter of the alphabet out of building bricks and practice letter formation in a unique way.

What You Need:

- Building bricks of any size and shape

What You Do:

1. Ask your learner, "Can you make an uppercase letter out of bricks?"
2. Encourage your child to make a **plan**. Ask, "What letter do you want to make first?" and "How many bricks do you think you'll need?"
3. Give your child time to **create** their design. Ask your child if they need any help, but they should ultimately be doing most of the building.
4. Have designers **play** with their new design. Ask, "What is a word that starts with the letter you built?"
5. After testing out the design, ask your learner what ways they can **adjust** their design. For example, "Do you want to make your letter bigger or smaller?"
6. Challenge designers to **share** their new designs. They can record a video or draw pictures of their design. You can ask questions, such as:
 - Did you have fun?
 - Can you sing the alphabet?
 - What sound does your letter make?

Amplify this challenge! Choose one or more of the following questions to add a new level of difficulty to the challenge:

- Can you make lowercase letters?
- Can you build letters to spell a word?

Design Challenge: Creating a Cup Tower



In this activity, your child will be challenged to make a tower using only one material: paper cups! The purpose of this challenge is to teach your child design thinking strategies so that they can maximize their tower's height.

What You Need:

- Paper cups
- Ruler, tape measure, or yardstick
- Pen and paper for taking notes

What You Do:

1. First, fully explain the prompt of this challenge to your child. Explain that their task is to create a cup tower and emphasize the purpose of the tower: to be as tall as possible. Tell your child that in order to achieve this, they will need to make at least a couple designs and compare their heights.
2. After your child understands the prompt, ask them to begin **brainstorming** different ways they can create their tower. Have them write or draw their ideas on a piece of paper (or you can draw their ideas while they explain them to you).
3. After your child has come up with a few design ideas, ask them to pick one that will work best. Be sure to ask them why they think this design is best and reiterate the purpose of the tower (height).
 - This is an important step of the design thinking process because it teaches your child to prioritize the purpose of their prototype (design) over their personal preferences. This will also prevent your child from getting too emotionally invested in one design.
4. Once your child has identified the prototype they think will be the tallest, give them the paper cups and allow them to build. We suggest allowing your child to work independently through any challenges, but be sure to supervise and help out wherever you see fit.
5. After your child has finished building, it's time to **test** their prototype. Measure the tower's height and have your child record the height on a piece of paper.
6. Since the purpose of this challenge is to build the tallest tower possible, your child will need to create at least one more prototype and compare its height with the first tower. Ask your child some of the following questions so that they can reflect on their first design:
 - a. What worked well in building this tower?
 - b. What didn't work well?

Design Challenge: Creating a Cup Tower



- c. What could you change about this tower to make it taller?
7. After you and your child have come up with some modifications, explain to your child that they can now use their ideas to make a new, taller tower.
8. Once again, ask your child to **brainstorm** different designs that will hopefully create a taller tower than their first one. Then, ask them to pick the one they think will be best.
9. Next, allow your child to **build** their design. Once again, allow them to work independently as much as possible.
10. After your child has finished building, it's time to test their new prototype. Again, measure and record the height of their tower and compare it to the first one.
 - a. If your child's second tower is taller, ask them some of the following questions: What worked well in your second design? What didn't work well? What specific adjustment to your first design made the second tower taller? What could you change about the second design to make it even taller?
 - b. If your child's second tower is shorter than their first, ask them some of the following questions: What worked well in your second design? What didn't work well? Why do you think your second tower was shorter than the first? What could you change about this design to make it taller?
11. You and your child can continue repeating this process and attempting to create a taller tower for as long as you'd like. Be sure to cover each step of the design thinking process since repetition will reinforce these core ideas!

STEM Design Challenge Cards for Young Learners



Use these STEM design challenges to foster creativity and create new things! First, print these cards double-sided and cut them out. Next, choose a design challenge to complete with your family.



Create a maze for a marble using materials you have at home.

Design a structure that balances on your hand.

Build something that floats.

Design a structure out of rocks and natural materials.

Create a 3D sculpture with three different textures.

Use something light and something heavy to build something tall.

Create a ramp that makes toy cars go fast.

Design a fairy garden that keeps the rain out.

STEM Design Challenge Cards for Young Learners



Use these STEM design challenges to foster creativity and create new things! First, print these cards double-sided and cut them out. Next, choose a design challenge to complete with your family. (Back of cards - extension activities)



Extension

Now, can you create a structure that balances on your hand and is the same height as your hand?

Extension

Now, can you create a maze using only three household items?

Extension

Now, can you design a structure out of rocks and natural materials that is at least six inches tall?

Extension

Now, can you build something that floats and holds ten pennies?

Extension

Now, can you use something light and something heavy to build something at least a foot tall that doesn't fall down?

Extension

Now, can you create a 3D sculpture with three different textures that can hold something?

Extension

Now, can you design a fairy garden that keeps the rain out and makes bugs happy?

Extension

Now, can you create a ramp that makes toy cars go fast using something plastic?

Make Your Own Puzzle



Sure, you could go out and buy a puzzle at the toy store. But why buy one when it's so easy to make your own puzzle at home? Do-it-yourself puzzles are inexpensive, fun to make, and children can choose or create any design they like. This personalized puzzle is a great way to inspire your child's creativity, and it's an activity you can come back to time and again as the designs and resulting puzzles are endless! Whether you're planning birthday party activities or simply want to engage your child in an arts and crafts project, this DIY puzzle is a great place to start.

What You Need:

- Thin cardboard or posterboard
- Glue
- Scissors
- Craft knife
- Crayons or markers
- Magazines
- Paper

What You Do:

1. Help your child to decide if they want to cut out a picture from a magazine or draw their own picture.
2. Hand them the markers or crayons if they're drawing their own design, then skip to Step 4. Or, if they'd rather choose a picture from a magazine, let them cut it out, then help them glue the picture to the cardboard. Set it aside to dry.
3. When the glue is completely dry, use the scissors to trim the cardboard to fit the picture exactly. Be sure to toss any extra cardboard into the recycle bin.
4. This next step needs to be completed by an adult: Use the craft knife to cut the picture on the cardboard into squiggly shapes. The smaller the pieces, the more challenging the puzzle will be.
5. When you finish cutting the picture into pieces, mix it up and give it to your child to solve. Good luck putting it back together again!

Mix Monochromatic Colors!



This is a great activity to give your child a hands-on lesson all about secondary colors, which are created when two primary colors are mixed together. After learning or reviewing some color-based vocabulary, young artists will choose a secondary color to explore and create a monochromatic color chart of all the many shades of their chosen color. Mixing their own palette of colors and making each one a different tint or shade is a bit like a puzzle—it's a fun challenge that will help children understand how many colors they can get from just a few tubes of paint.

What You Need:

- White watercolor paper cut into a square
- Ruler
- Pencil
- Primary color tempera paint (red, yellow, blue)
- Black tempera paint
- White tempera paint
- Paint brushes
- Water cup
- Mixing palette
- Rags

What You Do:

1. Discuss with your child the difference between **tint** and **shade**, and define the word **monochromatic**.
 - A tint is when white is added to a color.
 - A shade is when black is added to a color.
 - Monochromatic refers to all the hues (tints and shades) of one color.
2. Have your child use a pencil and ruler to grid the white paper into at least 20 squares.
3. Have them decide on a secondary color to work with (green, orange, or purple), and choose the correct primary colors to make their secondary color. Here is where your learner can start experimenting!
 - blue + yellow = green
 - yellow + red = orange
 - blue + red = purple
4. Have your child squeeze out their chosen primary colors onto a mixing palette, and also squeeze out black and white paint in separate areas on the same palette.

Mix Monochromatic Colors!



5. Encourage your artist to mix small amounts of paint together to alter the tint and hue of the color. They can also alter the amounts of the colors being mixed together. For example, if they're using green, use a lot of yellow and a tiny bit of blue for light, grassy green, or use more blue and less yellow for a rich, dark green. The paintbrush will have to be rinsed out after each new color is mixed to avoid repeating colors.
6. Add in white to different hues of your color, tinting it to lighter values.
7. Add in black to different hues of your color, shading it to darker values.
8. Have your child paint each square on their grid with a different version of the color until the entire grid is filled in.
9. Allow to dry.
10. Hang on to this color chart and put in into a portfolio or sketch book as a handy reference.

Tip: With any additional time or as another activity, use the painted grid as a reference to create a monochromatic still life. Simply set up a plant with a couple of household objects (such as cups, pottery, etc.), and create a painting using only colors found on the color chart.