

**Hands-On
Learning**

Week 7

P
Preschool

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

To do list:

Course activities:

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☐ TUESDAY

To do list:

Course activities:

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☐ WEDNESDAY

To do list:

Course activities:

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☐ THURSDAY

To do list:

Course activities:

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☐ FRIDAY

To do list:

Course activities:

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WEEKEND ACTIVITIES:

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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.

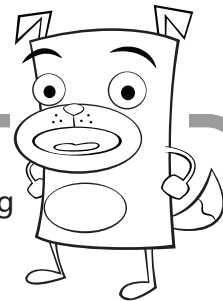
For another approach to brain breaks, try these:

- **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 _____

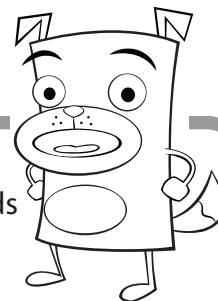
STEM Design Challenge: Plan, Reflect, Revise



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

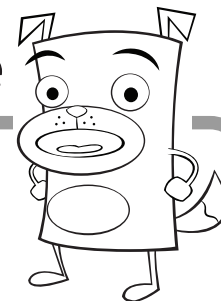
Directions: Reflect on your STEM design challenge by drawing pictures or writing words in the space provided. Think about the following questions:

- 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.



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.



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.



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:

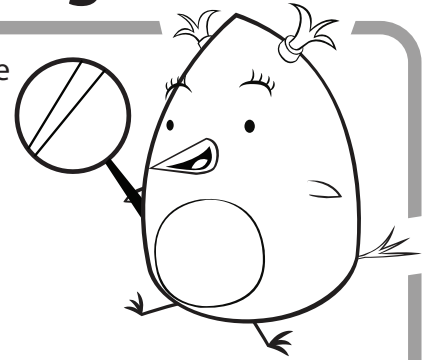
- Index cards or enough paper to make 20 small cards (about the size of a playing card)
- Markers

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.



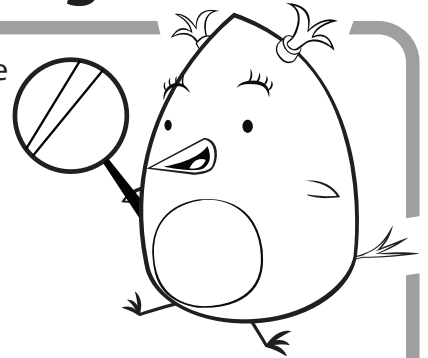
Inside

- | | |
|---|--|
| ☐ 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

- | | |
|---|--|
| ☐ Find a stick that is smaller than your hand. | |
| ☐ Find something that smells good. | |
| ☐ Find something that is round. | ☐ Find something that is heavy. |
| ☐ Find a stick that is larger than your hand. | ☐ Find something orange. |
| ☐ Find something that needs sunlight to live. | ☐ Find something that flies. |
| ☐ Find something that helps people stay safe. | ☐ Find something that crawls. |

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

Building Brick Challenge: Make a Face



In this design challenge, your child will use building bricks to create a funny face. The activity instructions include question prompts that can help guide your child through the creative process, and promote their problem-solving skills. Playing with building bricks also helps children develop hand-eye coordination and spatial skills.

What You Need:

- Building bricks of any size and shape

What You Do:

1. Ask your learner, "Can you make a funny face out of bricks?"
2. Encourage your child to make a **plan**. Ask, "How many bricks do you think you will need?" or "What part of the face do you want to make first?"
3. Give your child time to **create** their design. Ask, "Do you need help?" (They should ultimately be doing most of the building.)
4. Have designers **play** with their new design. Ask, "What emotion is your face feeling?"
5. After testing out the design, challenge your learner to think about the ways in which they can **adjust** their design. Ask, "Is there anything you want to change about the face?"
6. Challenge designers to **share** their new designs. They can record a video, or draw a picture of the design and add a few sentences describing it. You can ask and include in your video or article questions, such as "Did you have fun?" and "Does your face have a name?"

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

- Can you make a face that looks like you?
- Can you build a body for your face?

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: Making a Boat



In this activity, your child will be tasked to create a boat that can successfully float 25 pennies. They can be creative with how they make their boat and can use any household items. We have given instructions which you can use to guide your child through the design thinking process. We have also given step-by-step instructions for making a boat in case your child is stuck and needs some inspiration.

What You Need:

- Plastic straws
- Duct tape
- Plastic wrap
- Plastic container/Tupperware
- Mini paper cup
- 25 pennies set aside in a plastic bag
- Pen and paper for taking notes

What You Do:

1. Before your child gets to work, make sure that they fully understand the prompt of this challenge. Explain to them that they're supposed to use the materials you're providing in order to create a boat that will hold 25 pennies and stay afloat.
2. Ask your child some of the following questions so that they start thinking about why certain things float and why others sink:
 - a. Besides a boat, what are some things you know that float in water?
 - b. What are some things that sink in water?
 - c. Why do you think a boat is able to float? (Answer: the concept of buoyancy.)
3. Explain to your child that buoyancy is a force underneath an object that pushes it upward. When an object (like a boat) has more buoyancy, it can float higher on the water because it is being pushed upward with more force.
4. After your child fully understands the prompt of this challenge and has considered the properties of objects that float, they can begin **brainstorming** different ways to build a boat of their own.
 - Feel free to show your child all the materials you will provide, but don't let them start building just yet. Instead, have them draw or write down their ideas on a piece of paper so that they can refer back to them later. (You can also write them down if you'd like.)
5. Once your child is done brainstorming, ask them to choose the idea they think will work best. Be sure to ask them why they are choosing this design, emphasizing the purpose of the boat (to float 25 pennies).

Design Challenge: Making a Boat



- This is an important step of the design thinking process because it teaches your child to prioritize the functionality of their design over personal preferences. This also prevents your child from getting emotionally attached to one design.
6. Next, allow your child to begin **building**. Be sure to supervise for safety purposes, but allow them to work independently through challenges as much as possible.
 7. After your child is done building, it's time to **test** the design. Have your child place the 25 pennies on their boat, counting them aloud one by one. Then, fill a container with water to serve as a "pool" for the boat to float on. Next, have your child place their boat on the water and observe whether it successfully floats the pennies.
 - a. If your child's boat successfully floats with 25 pennies in it, congratulate them for their success!
 - b. If your child's boat sinks, make sure they aren't discouraged. Ask your child what they think went wrong and why. Then, encourage them to go back and repeat this process in order to make a boat that works next time.

Below, we have written instructions for building a boat in case your child is struggling to come up with ideas. Feel free to have your child build something entirely on their own, or use the procedure below:

1. First, take a piece of duct tape and stick some plastic straws to the adhesive side of the tape.
 - Ask your child why plastic straws are a useful item to make a boat out of. (Answer: plastic straws are buoyant, meaning they're able to float in water.)
2. Next, wrap your straws and duct tape in plastic wrap.
 - Ask your child why they think using plastic wrap is useful. (Answer: plastic wrap makes the boat "waterproof.")
3. Tape down the plastic wrap using duct tape to secure it in place.
 - At this point, you have finished building the boat's structure.
4. After your child has finished building their boat, have them tape down a small paper cup to serve as a weight holder for their pennies.
 - Ask your child why they think it's important to have a weight holder. (Answer: a weight holder balances out the weight of the boat, so it won't tip over when you place the pennies on top.)
5. Next, have your child add the pennies inside the cup one at a time, counting how many there are.
6. Finally, test out your child's boat!

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?

Create a Collagraph



Print-making is thought to have originated in China after the invention of paper in the 2nd century AD. This activity features a special kind of print-making called collagraphy, where flat materials are layered and glued onto a base, then painted and used to create a final finished print. Using this ancient art is a great way to teach your child about history and inspire their creativity at the same time.

What You Need:

- Pencil
- Sketch paper
- Cardboard
- Various textured materials, such as burlap, sandpaper, string, or fabric
- Craft glue
- Scissors
- Tempera paint
- White paper
- Black fine point marker

What You Do:

1. Before you get started, go online with your child and look at collagraphs by Barbara Garrison, whose works have graced the pages of children's books such as *The Frog House*. Note how the different textures she uses affects the look of the finished picture.
2. Have your child think about how they want their finished print to look, and encourage them to make a few sketches.
3. Next, have your child use scissors to begin cutting shapes out of the materials, using the sketch as a guide.
4. Now they can layer the materials onto the cardboard base, securing them with craft glue. Remind your learner to think about how the different textures and shapes will look after they've been printed.
5. Set the collagraph aside, and let it dry for 2–3 hours.
6. Once it's dry, it's time to start printing! Have your child paint over the collagraph with tempera paints. They can use as many colors as they want, using different colors for different parts of the painting.
7. Have them press the painted collagraph onto a sheet of paper to create their print. They can paint and print their collagraph as many times as they like!
8. Set the prints aside to dry.
9. When dry, your child can use a fine point marker to add details to finish the artwork.
10. Let them pick the perfect spot to display their finished print.

Me On TV!



Sick of hearing, "Mooo-oom! Can I watch TV?" The next time this common cry fills your living room, how about suggesting your child create a memorable program of their own? Once the little superstar in your life discovers how much fun it is to make up their own characters and stories, they will be hard-pressed to find a TV show character that's up to snuff!

What You Need:

- Large cardboard box (big enough for a child to perch under)
- Paints, crayons, markers, glitter, sequins, feathers, glue—anything that your child might like to use to decorate their very own TV!
- Heavy-duty scissors or utility knife (all cutting in this activity **MUST** be done by an adult)

What You Do:

1. You can't have a proper television show without a proper television. Start by cutting a large square or rectangular hole on one side of your cardboard box.
2. Next, let your child decorate their new TV however they wants (make sure you do this project in a place that can get a little messy).
3. When the television is all finished (and the paint and glue has fully dried), have your child perch on their knees under the box so their face and chest are visible through the "screen." Your little one is all set to star in their very own show!
4. If you have some extra cardboard, why not make a little remote? As you "change the channel" you'll be able to enjoy all that your child's imagination has to offer.