



## Materials Packet #1 Grades K-5

This packet contains paper materials that might help you as you practice skills with your students K-5.

This material is not mandatory! Nothing should be turned in and nothing will be graded.

This is for practice only.

## Math and Science at Home Activities for Grades K-5

### **Make-It-Yourself Hanger Scale/Balance: Grades Pre-K-1, Math**

#### **What you need:**

Hanger (with clips or without)

2 scrap pieces of ribbon

2 small gift boxes, empty, clean food containers, or two egg cups, cut from an egg carton (boxes need to be the same size)

Stapler, tape or glue

#### **Instructions:**

1) Cut two equal-length strips of ribbon (about 6 inches long, each).

2) Staple each end of the ribbon to one side of the box. Repeat with the second box.

3) Hang the ribbon loops over the hanger into the grooves (for a clip-less hanger) or clip the ribbon loops onto a hanger with clips.

One box hangs on one side of the hanger, and the other on the opposite so two items can be weighed at one time.

Hang the hanger from a nail in the wall, standing toilet paper holder or a door knob (as long as the items you will be weighing are not too heavy). You have a homemade DIY toy scale!

#### **How to Use This Tool:**

- Use the hanger scale to compare the weights of objects and discuss terms like 'greater than,' 'less than,' 'heaviest,' and 'lightest' with your child at home. It is a fun toy for your child to use in their pretend play as well.
- Gather a few household items to weigh-toy cars, rocks, blocks, Legos, etc.
- Label one piece of paper "Light" and another piece of paper "Heavy".
- Weigh two items at a time by placing one in each box on the hanger scale. Compare the two items to determine which is heaviest of the two.
- Talk to your child about which one is "heavy" and which one is "light." Place the items onto the labeled papers where they belong.
- After weighing all of the items gathered, weigh all of the "heavy" items to label one the "heaviest". Do the same for the items on the "light" paper to determine which is the "lightest".
- If you have a home Word Wall, add the words, "greater than, less than, equal to" "heavy, heavier, heaviest" and "light, lighter and lightest" to reinforce these terms for future use

## LEARNING CODING WITHOUT A COMPUTER

### What is coding and computer programming?

Coding is a set of instructions written by a programmer, that the computer carries out. Sequential activities help children learn different aspects of computer coding.

#### 1.Feed The Mouse

This game teaches children about **algorithms**, which is a group of instructions written by the programmer to tell the computer what to do. They will also learn the concept of **debugging**, which is how to fix a problem in a program.

In this game, teachers and parents can design a path for the mouse using a deck of card and place some yummy treats for him throughout the path.



The objective of the game is to move the mouse through the path without missing any treats on its way.

#### Materials Needed

- A deck of cards
- A toy Mouse
- A few toy yummy treats

#### How to play

One child acts as the Computer (who moves the mouse by listening to the programmer's instructions). The other child acts as the Programmer (who gives the commands). The Programmer gives verbal instructions like 'Move Forward' (state how many card spaces), 'Move

Backward' (state how many card spaces), and 'Turn Right' or 'Turn Left' to guide the computer/mouse throughout the path, without missing any of the yummy treats. The challenge level of the game can be increased by creating a more complex maze and putting obstacles in pathways that the mouse has to escape from or maneuver around.

## 2. Binary Cards

This activity introduces the binary system, which is the language that computers understand, to anyone who can count.

### ASCII BINARY ALPHABET

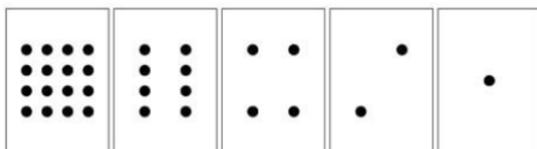
|   |         |   |         |
|---|---------|---|---------|
| A | 1000001 | N | 1001110 |
| B | 1000010 | O | 1001111 |
| C | 1000011 | P | 1010000 |
| D | 1000100 | Q | 1010001 |
| E | 1000101 | R | 1010010 |
| F | 1000110 | S | 1010011 |
| G | 1000111 | T | 1010100 |
| H | 1001000 | U | 1010101 |
| I | 1001001 | V | 1010110 |
| J | 1001010 | W | 1010111 |
| K | 1001011 | X | 1010111 |
| L | 1001100 | Y | 1011001 |
| M | 1001101 | Z | 1011010 |

### Materials Needed

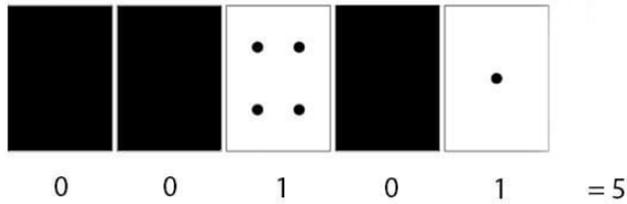
A set of cards with 1, 2, 4, 8 and 16 dots. Visit [CS Unplugged](#) for printable cards. There's also more in-depth instructions and additional activities to try out!

### How to Play

Step 1: Cut out the cards on your sheet and lay them out with the 16-dot card on the left. Make sure the cards are placed in exactly the same order.



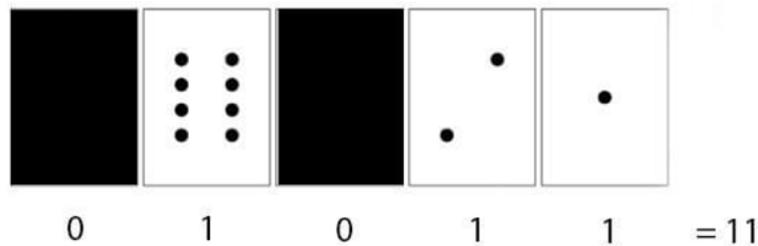
Step 2: Now flip the cards so exactly 5 dots show—keep your cards in the same order!



So, the binary number for 5 is 00101 or 101.

When a binary number card is not showing, it is represented by a zero. When it is showing, it is represented by a one. This is the binary number system.

Here's another example showing how to work out the number 11 in binary:



So the binary number for 11 is 01011 or 1011.

Step 3: Find out how to get 4, 10, 12. Is there more than one way to get any number?

What is the biggest number you can make? What is the smallest? Is there any number you can't make between the smallest and biggest numbers?

## Literacy at Home Activities for Grades K-5

### **1. Make A Home WORD WALL—Pre-K-5 (Language, reading/writing)**

Using blank paper or notebook paper, brainstorm with your child words that they read in stories, see in newspapers, magazines or on television. Using a marker write those words in large letters on individual papers or post-its. Have your child draw a picture that goes with the word to help them remember that word. Post these words on a wall or door where children can see them each day. Practice reading and spelling the words and ask your child to use the words in a sentence. For younger children, you might try writing it down for them and having them copy the words. Include English and Spanish words as you desire.

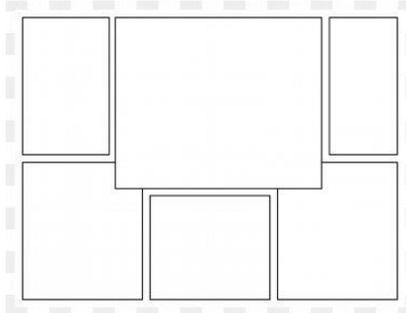


### **2. Start A Daily Journal: All Grade Levels K-8 (Writing)**

Using lined notebook paper, a spiral or pages stapled together, have your child create a blank book that they can use as a daily writing journal. Allow them to decorate a cover for their journal using scrap materials you may have around the house or garage (fabric, cardboard, old magazines cut up etc.). For Pre-K-Grade 2, refer to your word wall if you have made one, and ask students to write stories or sentences using these words. If you prefer, write a starting line (example: “I woke up this morning and my face had turned purple....” or “I went to my friend’s house and believe it or not....”) and then have your child write a creative story to find out what happens. Remember that stories have a beginning, a middle and an end. Children can also add drawings or images they find or photographs to their daily journal.

### **3. Make A Comic Strip or Comic Book: All Grade Levels K-8 (Writing)**

Use the template in our Packet #1 to create your own comic strip or comic book. Create characters, settings and problems to solve in this comic and remember...good comic stories have a beginning, middle and end!



#### **4. Make Your Own Non-Toxic Play Dough: Grades Pre-K- 2<sup>nd</sup>. (Math and Language)**

##### **Recipe:**

2 cups *all-purpose flour*

1 cup *salt*

1 cup water

Optional: 2-3 drops of food coloring

##### **Instructions**

- In a large mixing bowl, stir together the *flour* and *salt*.
- Gradually add water while stirring and mixing to form a dough with a Play-Doh like consistency.
- Add food coloring if desired.
- Form the dough into a ball and knead for approximately 5 minutes, adding a bit more flour if the dough is too sticky or a bit more water if it's too dry.

Homemade play dough can be used to build and practice letters, numbers, words, math problems and if stored in an air-tight container, will last for a long time.

#### **4: Sand or Rice Tray Letters: Pre-K-Kinder**

Use a baking pan, tray, box lid or cookie sheet with an edge on it to prevent spilling. Spread sand, dry rice, or even shaving cream on the pan. Allow your child to draw their alphabet, numbers, name, common spelling words in the sand, rice or shaving cream. Then using their hand, a pencil or ruler, smooth out the surface and write another word, letter or number. If you have magnetic numbers or letters at home, these can also be used on a metal cookie sheets as make-shift magnetic boards for practicing word-building and math skills. Use the letter or number cards in our Packet #1 for this activity.



