

# Halloween Math

Get into the “spirit” of Halloween with these math games designed to brush up on basic math skills. Students will work on addition, subtraction, multiplication and division (if their skills allow) as well as place value.

## Kansas College and Career Ready Standards for Math

- 3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 1000.
- 3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
- 3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value and properties of operations.
- 4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form.
- 4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.
- 4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations.

## Classroom teacher provides :

- 1-100 page (one per pair of students)
- 2 dice per pair of students
- 1 deck of playing cards per pair of students
- 1 small counter, such as beans, per student (different colors if possible.)
- Paper and pencils

**If you don't have access to enough dice or decks of cards for your class, please let us email me at [sharon.bertolio@greenbush.org](mailto:sharon.bertolio@greenbush.org) and we can send them to you. By not providing them unless requested we can keep our shipping costs (and yours) low.**

**During the “Halloween Math” IDL program, we will be doing the following activities and students will need the corresponding materials:**

<b>Activity</b>	<b>Supplies</b>
Brief history of Halloween	none
Learn and practice math games	1-100 page (one per pair of students) 2 dice per pair of students 1 deck of playing cards per pair of students 1 small counter, such as beans, per student (different colors if possible.) Paper and pencils

# Program Connections Information

- 1. All classes will take place using Zoom desktop video. If your building is already set up to use a desktop video application with a computer, simply open a browser and enter <https://zoom.us/j/3662120241> in the URL space.**
- 2. You may need to download Zoom launcher software (free download) if you don't already have it. This needs to be done in advance of the lesson.**
- 3. While it is possible to utilize the internal webcam and microphone in a laptop for the audio and video for the lesson, they do not provide optimal results. An external microphone allows the Greenbush teacher to better hear your students and provides for a more interactive experience.**
- 4. If using a Polycom videoconferencing unit (or any legacy type videoconferencing unit) to connect to a ZOOM conference, make sure the unit is in "encrypted mode" then dial the following IP on the internet: 162.255.37.11 or 162.255.36.11 and once connected, they will ask for a MEETING ID: enter 3662120241 (for Sharon at Science Center).**
- 5. It's always a good idea to touch base with your district technology facilitator prior to your program to make sure all systems/equipment are in place and operational.**
- 6. Classes take place at the following times: 9:00-9:45, 10:00, 10:45, 12:15-1:00, 1:15-2:00, and 2:15-3:00. If you log in early to your class, you may connect during another class' lesson. If you do, please check your connection to make sure things are working properly and then leave the meeting until your scheduled time by selecting "End Meeting" in the lower right corner of your Zoom screen and click on "Leave Meeting". This prevents your site from interfering with the lesson currently in progress. After your lesson is finished, please leave the meeting.**
- 7. If you have questions, please call Sharon Bertolio at Greenbush (620-724-6281.)**

**Prior to the IDL lesson, please pre-teach and practice these cooperative learning techniques with your students. These will be used in the IDL lessons this school year.**

### **Round Robin**

Each member of the team takes a turn sharing orally with the team.

### **Rally Robin**

With a partner, students take turns sharing brief oral responses.

### **Timed Pair Share**

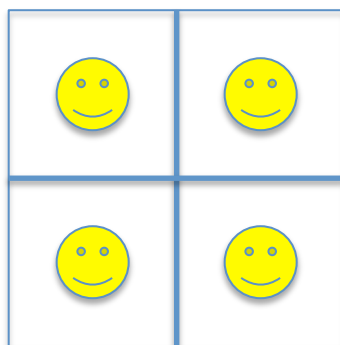
In pairs, students share with a partner for a predetermined time while the partner listens. Then partners switch roles.

### **Stand Up, Hand Up, Pair Up**

Students move around with hands in the air and quickly find a partner with whom to share or discuss. Once students find a partner, they give each other a “high five” and stand together, ready for the next instructions.

### **More terms to know –**

**Shoulder Partner:**  
The person sitting on the student’s right or left.



**Face Partner:**  
The person sitting facing the student.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

# GHOST'S GRAVE

**What you will need:**

two dice

one small counter, such as beans, per player (different colors if possible)

paper and pencil

**Set up:**

Drop the counter on the grid. The ghost's grave lies in whatever square the counter lands.

**Play:**

- Determine which player will roll first.
- Players take turns rolling the dice. On each turn, a player finds the sum of the numbers on the dice and moves the counter that number of spaces on the grid.

The first player to cross the ghost's grave wins.

# PIRATE'S WATCH

**What you will need:**

Two dice, paper and pencil

**Set up:**

Each player draws a circle on paper to represent the face on a pirate's watch. Draw slashes around the watch where the numbers 1-12 would go.

**Play:**

- Determine which player will roll first.
- Roll the dice.
- Decide which operation to use: addition, subtraction, multiplication, or division.
- On the face of the pirate's watch, write the number that is the sum, difference, product or quotient that results from your roll of the dice.
- Continue rolling the dice and writing the answers of your roll on the face of the pirate's watch.
- Your turn is over when you are unable to write a number on the face of the pirate's watch.

The first player to fill in the face of the pirate's watch wins.

# Broomsticks Up!

## What you will need:

A deck of cards, one die, paper and pencil

## Set up:

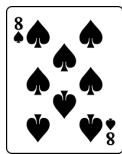
Remove all face cards from the deck. Place remaining cards facedown in a pile in the center of the playing surface.

## Play:

- Determine which player will roll first.
- This player flips over the top card of the deck. This card becomes the goal number.
- Starting with the first player and rotating left, players attempt to reach the goal number in five rolls of the die using addition, subtraction, multiplication, and division.

## Example:

Your goal number is:



Your rolls:



Let's break that down:

$$\text{4} - \text{1} = 3$$

$$3 \times \text{4} = 12$$

$$12 \div \text{2} = 6$$

$$6 + \text{2} = 8$$

If you are unable to reach your goal in five or less rolls of the die, it is the next player's turn.

## Scoring:

Each round of play is like a baseball inning. The player that rolls and is able to reach the goal number in five rolls or less takes that card as a "home run." The player with the most cards at the end of 9 rounds wins.

# **Additional Lesson Resources**



# HALLOWEEN HISTORY

Halloween is a wonderful celebration of parties, costumes and candy that comes once each year. But how did this strange custom originate?

## THE BEGINNING:

Originally Halloween was a festival of the end of summer, which has survived to the present day as "Halloween." It is observed the night of October 31. The ancient Celts called the festival *Samhain* and observed it to celebrate the beginning of winter and the Celtic New Year. *Samhain* means "end of summer." In Ireland the festival was known as *Samhain*, the feast of the Sun.

In Scotland, the celebration was known as "Halloween." *Samhain* marked the third and final harvest, and the storage of food for the winter. It had nothing to do with anything evil, that is a modern day myth perpetuated in films.

*Samhain* was a sun festival marked by a special fire and fire rituals during the height of the Druids, the priests of the Celts. All fires except those of the Druids were put out on *Samhain*. All fires were then relit from the town's fire. On the night of October 31, villagers would put out the fires in their homes. In Ireland and Scotland, the custom of putting out one's home fire and relighting it from the festival bonfire has continued into modern times. They would then dress up in fancy costumes and parade around the neighborhood.

## TRICK OR TREATING STARTED IN DIFFERENT PLACES:

1. An old Irish practice called for going door to door to collect money, bread cake, cheese, eggs, apples, and such to prepare for the festival.
2. Another was the English asking for *soul cakes*, or offerings, in exchange for promises of prosperity or protection against bad luck.

*So, although some people may think that Halloween was once a practice of evil people, Halloween itself did not grow out of evil practices. It grew out of the rituals of Celts celebrating a new year, and out of medieval prayer rituals of Europeans.*

## THROUGHOUT THE YEARS:

- **1840's** Irish immigrants fleeing their country's potato famine brought the custom of Halloween to America.
- **1900's** In the early part of the century only the Celts celebrated Halloween. It took a long time for others to pick up on the custom.
- **1920's** Halloween parties were all the rage. Towns would have dances, social gatherings, and a variety of decorations. Parties had themes like "Animals" or "Famous People."
- **1930's** Halloween was being celebrated more by adults than kids. Costumes

were outlandish, and the parties would last all night. Many had big parties that would cost a small fortune.

◦ **1940's** (The war years) Most of the parties were being given for the children. Most of the men were away at war.

◦ **1950's** The parties were almost exclusively for children. The children didn't seem to mind though.

◦ **1960's** The parties were again starting to join in on all the Halloween fun. The children were out trick-or-treating like never before. For the first time children were dressing as TV characters.

◦ **1970's** the people who enjoyed Halloween began decorating the outside of their homes as well as inside; decorations were becoming available in stores.

◦ **1980s** was the rebirth of the adult Halloween party. Adults found that they could enjoy the same games and fun as the children. Almost every store was now selling Halloween decorations.

## **JACK-O-LANTERN HISTORY:**

The custom is believed to have come from Irish folklore. As the tale is told, a man named Jack, who was known as a joker and trickster, tricked the devil into climbing a tree. Jack then carved an image of a cross in the tree's trunk, trapping the devil up the tree.

According to the folk tale, after Jack died, he was denied entrance to Heaven because of his trickster ways, but he was also denied access to Hell because he had tricked the devil. Instead, the devil gave him a single ember to light his way through the frigid darkness. The ember was placed inside a hollowed-out turnip to keep it glowing longer.

The Irish used turnips as their "Jack's lanterns" originally. But when the immigrants came to America, they found that pumpkins were far more plentiful than turnips. So the Jack-O-Lantern in America became a hollowed-out pumpkin, lit with a candle instead of an ember like the ones you see now.



# Halloween Math Websites

Spooky Sequences - Count on ...Three digit numbers - One of the ghosts in the spooky sequence is missing a BIG number. (Hint: To figure out the answer, count by ones). Click on the number buttons along the bottom of the main game screen to add a number to the ghost. Click 'enter' to register your answer. If correct, you'll send the ghosts back to the haunted house. There are five spooky sequences to complete.  
<http://www.oswego.org/oscd-web/games/spookyseq3.html>

Haunted Hill is full of spooks... but how many? and which kinds? We need your help to find out!

<http://www.mathcats.com/explore/hauntedhill.html>

Defeat the Math Monster

<http://www.mrnussbaum.com/monster.htm>

Pumpkin Multiples

You know your multiplication facts and you've been step counting for years. This game tests that knowledge by challenging you to choose multiples from a series of falling numbers. Use the arrow keys to move the ghost left and right.

<http://www.mathplayground.com/multiples.html>