Objective: To create social media content for children grades K-3 in Uganda to continue learning beyond the classroom (and during the pandemic).

Phase 1: Listen. Research from the literature

- Uganda schooling: History, current struggles
  - Carnahan, Sharon. "SCHOOL READINESS PROJECT UGANDA 2018-2019." *Rollins College*, 26 Feb. 2019.
    - Concerns from interviews of educators and parents in uganda
      - Teachers want resources and training in early education methods but they are difficult to access
      - Parent sensitization about the importance of school is lacking
      - Most parents are illiterate and communication is hard
      - Hardships caused by the remote locations include walking 5km to school, teachers needing to live at school without safe housing and no electricity
      - Hunger and malnutrition in students and sometimes teachers
      - Incomplete number of school books and no story or reading books
      - Lack of knowledge of government policy action plan in ECD or access to printed resources produced in Kampala

## • Importance of play during child development

- Baillet, Amandine, and Deborah Llewellyn. "Learning Toys Production Guide." *Plan International*, 1 Jan. 2014,
  - Children's play and development of social skills and thinking skills go hand in hand
  - Children learn through play correlation between play and academic success
  - Through play, children learn to:
    - Make a plan and follow through (initiative)
    - Learn from trial and error, imagination, problem solving
    - apply concepts of quantity, science, and movement to real life
    - Reason in a logical, analytical manner by acting on objects
    - Communicate with classmates and talk about different points of view
    - Satisfaction from one's own accomplishments (pride)
  - By using locally produced materials, children can learn about their own specific environment, community, culture.
  - Children can make their own learning toys and games that give kids a sense of achievement, ownership, pride
  - Importance of parents supporting development through

- Parents and caregivers can help children learn through play by providing enough time for play and ensuring that the materials are stimulating for their developmental needs
  - Novelty is needed for brain to continue development so caregiver will need to change and add new play materials with time
- Non-instructional talk for the caregiver observing and talking with the children
- Toys need to give children an appreciation for lovely, discovery, drive to learn about the unknown — has to be challenging enough to stimulate the Child's mind
- Learning toys:
  - Majority can be used in many ways blocks, shells, bottle caps, picture cards
  - Attractive and well made colorful, pics with detail
  - New things added to increase novelty
- Principles
  - Children learn by doing, children learn through play, learn what is personally meaningful to them, learn well when they use what they already know as they construct new knowledge, learning is social, strong relationship between emotions and learning
- Important for children to direct their learning rather than the caregiver
  - Blocks and building, imagination, books and pictures, games and puzzles, sand and water play

# • Math topics and concepts that are important, along with some examples

- Baillet, Amandine, and Deborah Llewellyn. "Learning Toys Production Guide." *Plan International*, 1 Jan. 2014,
  - 1. Sorting and classifying: organizing objects according to their properties (size, color, shape, texture)
  - 2. Recognizing patterns caregiver or child claps/snaps a variety of patterns then others repeat and continue the pattern
    - Or using objects make a pattern and child has to copy it, or ask what comes next
    - Make a square/triangle out of matchsticks and ask how many it takes to make 1, 2, 3 of those shapes
  - 3. Counting and writing numerals
  - 4. Comparing to understand the concept of equal, more or less, and then to learn to compare

- Can give child a string and find something the same length as that, then ask them to find something shorter or longer
- Use water container and get objects and ask kids to predict what will float and what will sink
- 5. Understanding numbers at a concept level explore concrete materials and relating numbers to problem situations — explore numbers 1-10 with many different materials to
- 6. Shape and space

# • Math Learning objectives appropriate for different grade levels K-3

- Learning Framework For Early Childhood Years 3-6 by NCDC Uganda (Source:https://www.ncdc.go.ug/sites/default/files/curriculum/ECDLFW.pdf)
  - Knowing and distinguishing the attributes of objects
  - Comparing objects using things like size, shape and other attributes
  - Recognizing, describing, and representing numbers and their relationships and solving mathematical problems with competence and confidence
  - Using appropriate measuring units, instruments and formulas in a variety of contexts
  - Understanding and using the concept of time
  - Understanding the concept of space
  - Recognizing and describing the use of money
  - Recognizing and creating number patterns
  - Representing and interpreting information in pictorial form
- Learning Framework For Years 6-8
- Examples of math activities using the above objectives (We can select a few and insert them here)
  - Ex: Get Girls involved with cooking and asking questions about which is more/less, heavier/lighter, etc
  - Ex: walk around outside or in the house and count lengths by steps, steps of 5, hands, etc
  - 1. Sorting and classifying: organizing objects according to their properties (size, color, shape, texture)
    - EX: Provide a container of objects such as buttons, bottle caps, rocks, large seed, leaves, squares of cloth. Ask children to sort them by one characteristic (such as color, size, shape, texture). Then, ask them to find another way to sort the objects.
      - Challenge: Ask the children to compare the two groups of which has more and less objects
  - 2. Recognizing patterns caregiver or child claps/snaps a variety of patterns then others repeat and continue the pattern. Or using objects make a pattern and

child has to copy it, or ask what comes next. Make a square/triangle out of matchsticks and ask how many it takes to make 1, 2, 3 of those shapes

- EX: 1. Caregiver or child claps or snaps a pattern and the other must repeat and continue the pattern
- Ex 2: Using objects (buttons, bottle caps, rocks, large seeds, leaves, sticks) make a simple pattern (large-small, small-large). Ask the children to guess what comes next. Can ask children to make a different pattern and repeat. Patterns can get complex over time
- Ex 3: Make a triangle with sticks/matchsticks. Ask how many sticks it takes to make one triangle, two triangles, 3 triangles. Ask what the pattern is
- 3. Counting and writing numerals
  - Ex 1: Ask children to count any household items or items outside. Can have them go explore and count, or caregivers can provide materials for them to count.
  - Ex 2: Count a sequence and then do something with the body (Ex: 1-2-3-4 then spin, repeat). Let them try it
    - Challenge: Ask the kids to do this pattern backwards
    - Challenge: In a grouping and sorting activity, can ask them to count how many objects are in each category
  - Ex 3: write out or say 3-4 numbers and ask the children to rank them from highest to lowest, lowest to highest
- 4. Comparing to understand the concept of equal, more or less, and then to learn to compare. Can give child a string and find something the same length as that, then ask them to find something shorter or longer. Use water container and get objects and ask kids to predict what will float and what will sink
  - Ex 1: Give child a string or stick. Ask them to find something the same length as the string. Then, ask them to find something shorter or longer.
  - Ex 2: using water buckets, give children different objects and ask them to guess which objects will sink or float
- 5. Understanding numbers at a concept level explore concrete materials and relating numbers to problem situations — explore numbers 1-10 with many different materials to
  - Ex 1: Use any small object, count out a specific number (ex 5, 7) and as the children to explore and describe the different arrangements for that specific number of objects
  - Ex 2: Using cubes, toothpicks, sticks, explore the different designs possible with that specific number

- Ex 3: Give children 6 (or any number) of cubes or buttons or any material;. Ask them to solve different problems: make 2 stacks of 3, make 3 stacks of 2, make 1 stack of 6, make 6 stacks of 1, etc
- 6. Recording numbers at the symbolic level
  - Ex 1: give child string or sticks. Ask them to make a shape. Ask then to count the number of sides. Can ask them to draw on paper and pencil if available
  - Ex 2: Can do activities relating to numbers at a concept level (ex 5) but then can write down addition and subtraction problems to show what they did to sort hte different categories
  - Ex 3: Can give child an addition or subtraction problem and child has to come up with a story that fits the problem
- 7. Shape and Space
  - Ex 1: Caregiver creates design with any material. Children try to replicate the design. Can count the number of each shape used. Ex: make design with 3 triangles and 3 squares?
  - Ex 2: Give a child a shape and ask them to go inside or outside and find objects that are those shapes. Can draw the objects they find, can describe them if dont have paper and pencil
  - Ex 3: use objects for measuring. How many pieces of this string is the length of this room? Is the room wider or longer? How many buttons is this stick?
  - Ex 4: using a specific number of small sticks, ask a child to create a larger triangle using smaller triangles? Build a large square from a small square?
- Overcoming the challenge of lack of resources: using recycled goods
  - Baillet, Amandine, and Deborah Llewellyn. "Learning Toys Production Guide." *Plan International*, 1 Jan. 2014,
    - Pg 33. Collect "beautiful junk" give community the main purpose of making toys/games and give a list of resources needed for collection:
    - Corn Cobs, Tin cans, seed pods, bottle caps, sticks, wood, buttons, natural materials for paint,
  - Carnahan, Sharon. "SCHOOL READINESS PROJECT UGANDA 2018-2019." *Rollins College*, 26 Feb. 2019.
    - Fishing baskets, fabric strips
- Overcoming the challenge of lack of parent sensitivity to importance of education
  - Baillet, Amandine, and Deborah Llewellyn. "Learning Toys Production Guide." *Plan International*, 1 Jan. 2014,
    - Important for caregivers to try and bring math to everyday life

- Parents: can create math bag content to use for these activities: Find different materials like blocks, paperclips, sticks, bottle caps, buttons, corn on the cob, any recycled goods so kids can sort and count these things
- TFA interview with Emma
  - One of the most important things to do during quarantine (and in general) is to check in with families
    - Keep it open ended, and never assume which families need more help or don't have resources
  - Important to ask families for input and to create collaborative partnership between teacher and family
  - Would be helpful to create a survey for parents
    - Survey: ask parents what they want and need during quarantine or when kids are doing academic work at home
      - Do they need detailed instructions, general guidelines, guided questions for parents to ask kids when they are struggling?
      - Helpful that with each activity that is sent, there is an example of how to do the first problem
        - Provide a "parent teacher plan" so parents can get involved and help the child out when they struggle
  - Important: Whatever is sent out, you dont want it to be too controlling of the teacher or parent but they still need guidance to learn how to best facilitate learning
- Carnahan, Sharon. "SCHOOL READINESS PROJECT UGANDA 2018-2019." *Rollins College*, 26 Feb. 2019.
  - It is important to get parents more involved with children's education
  - Recommendation is to set up 2 times per term in each school inviting parents to discuss the importance of education
    - Also to schedule PTA meetings 3x per year in all schools where this time can be used to work on school improvement projects
    - Meet with anglican church officials to ask for parenting classes focussed on keeping kids in schools
- Government policies regarding early childhood care and education
  - The National Integrated Early Childhood Development Policy Action Plan (2016-2021) of Uganda. Ministry of Gender, Labour and Social Development, 2016.
    - Gov't of Uganda will ensure that children's early learning at all the different stages of development is implemented and supported.

- It will focus on increasing access to equitable, quality, integrated, inclusive and developmentally appropriate learning and stimulation opportunities and programs for all children under 8 years old
- Will establish a department in charge of early childhood education
- Will strengthen quality assurance of informal and formal early education and care programs and services
- Will expand professional development and ongoing support of ECD service providers and actors
- Will establish ECD centres at every primary school and support community based centers

## • Reading Learning Activities

- Learning Framework for Early Childhood Years 3-6 (Source: https://www.aft.org/sites/default/files/ae-winter2018-2019 0.pdf)
  - Reading aloud
  - Learning about the world
  - Learning new Vocabulary
  - Recognizing spellings
  - Learning handwriting
  - Learning literacy skills and strategies
  - Acquiring the English fluency
- Learning Framework for Years 6-8 (Source:

https://ncca.ie/media/2137/literacy\_in\_early\_childhood\_and\_primary\_education\_ 3-8\_years.pdf)

- Developing reading comprehension
- Learning about text functions and writings skills
- Digital literacy
- Developing reading fluency
- Developing skill in word recognition and the orthography of the language in question
- Examples of reading activities using the above objectives
  - "Student of the week": Parents can record their kids reading a curriculum book and send it to Enjuba social media department to have the chance to make their kid "Student of the week"
  - "Books of the week": Share three books every week (Maybe on Monday, Wednesday and Friday) so that parent can read them with kids.
  - "Books Polls": Share a list of books with their summary and takeaways, and have parents choose the top five (05) books they prefer for their children so Enjuba coud have a better idea of what books to use for the next activities.

- "We love reading": Share once or twice a week one benefit of reading in a child so parent can be motivated to engage their children in reading activities at home
- Sixty seconds with our teachers": Once week, have a teacher record a video of herself/himself reading a book and sharing the lessons learned from it. This way, parent could share with their kids and keep them engage in their learnings.
- Language Learning objectives appropriate for different grade levels K-3 (Source: https://www.ncdc.go.ug/sites/default/files/curriculum/ECDLFW.pdf)
  - Listening with acuity for information and enjoyment and responding appropriately in a wide range of situations
  - Communicate confidently, effectively and meaningfully in spoke and sign language in a wide range of situations
  - Reading to enjoy, acquire knowledge and be able to comprehend
  - Writing different kinds of factual and imaginative tasks depicting good letter formation, creativity and handwriting skills
- Example of Language activities using the above objective (We can select a few and insert them here)

Phase 2: Think. Research from the community

- Primary interviews with Aaron, Shiela, Sharon
- Talk to parents, teachers, students, librarians, principles, community leaders about what they enjoy and what is lacking during the pandemic (and in general)
- Get feedback on proposed activities to see if they are feasible, culturally appropriate, and engaging the kids

Phase 3: Act. Taking the tools to the classroom

- Create Social Media Title
  - Beyond The Classroom
    - Mission statement: Extending Educational Excellence in Uganda Beyond the Classroom



 $\equiv$ 

- Build social media site and sort activities into different grade levels and subjects
- Create parent and teacher resources to help facilitate children's learning
- Continue to work on and finalize a list of content for math skills
- Distribute content to parents (this could be via social media, through teachers, churches, enjuba, or other community organizers)

# <u>Math</u>

#### Games

Math Games:

For young children learning to count and perform simple addition. The game difficulty can be adjusted to the level of the child by asking harder math questions or modifying the games based on skill level.

### 1) Stick Dice:

Materials:

3 flat sticks or stones with one side marked and the other side blank Instructions:

One player tosses all three sticks in the air and has them land on a flat surface. If all three marked sides land face up the player gets 10 points, if 2 marked and 1 unmarked land face up, it equals 2 points, 2 unmarked and one marked equals 3 points, and 3 unmarked equals 5 points. Each player takes their turn and adds up their points after a designated amount of rounds. Any small objects can be used to count points like stones or tally marks. Highest score wins. The point value of each combination can be changed to increase the difficulty of the math.

#### 2) Bean Game:

Materials:

A shallow basket (paper plate), seven flat sided beans, peach pits, or other fruit pits marked with paint or marker on one side only.

Instructions:

The goal is to toss and catch beans flipping them from unmarked side up to marked side up. Before play, decide how many turns each player will take. Players alternate turns, but scores for each turn are totaled. All 7 beans are placed plain side up on the bottom of the basket. Holding sides of basket, carefully toss beans up and catch them trying to flip beans over to marked side during the toss. Count the number of beans landing marked side up for your score. If any beans fall out of the basket player subtracts the number of beans lost from their total score. After all players have taken the designated number of turns add the individual scores. Highest score wins. Small pebbles, sticks, or marbles can be given to children as scoring pieces. Each child can count his markers at the end of the game. This game is good for young children learning to count.

## 3) Math Bean Bag or Ring Toss

Materials:

Bean bags, weighted bags, or rings that are about 10 cm in diameter. If using bean bags have a bucket or some sort of opening for the goal. If using rings, place a stick that is about half a meter tall into the ground. Secure it in the ground so that when the ring is tossed at it, it wont fall over. Instructions:

Players line up along a designated tossing point and take turns throwing the bag or ring at the basket or the stick. Scoring can be set up a few different ways depending on the math skills of the children. The easiest scoring is to designate a successful toss meaning the bag lands in the basket or the ring lands on the stick is a point. Then children add up their points at after several rounds. For a more complicated scoring process points can be given for successful tosses and based on how close they were to the goal. For instance, if a ring lands on the stick it is 4 points, if it is not around the stick but touches the stick it is 2 points, and if it is within a 3 cm of the

stick it is 1 point. The same set up can be used with bags, if the bag makes it in the hole it is 4 points, if it touches the hole or bucket but does not fall in, then it is worth 2 points and if it 2cm or less it is worth 1 point. Players will be in charge of measuring the distance to determine which tosses count for points and will add up their total score after several rounds. The one with the most points wins. For additional difficulty there can be a predetermined winning score of say the first one to 20 points wins and if the player exceeds 20 points they bust and must start from their previous score or from zero.

#### 4) Math Challenge Obstacle Course

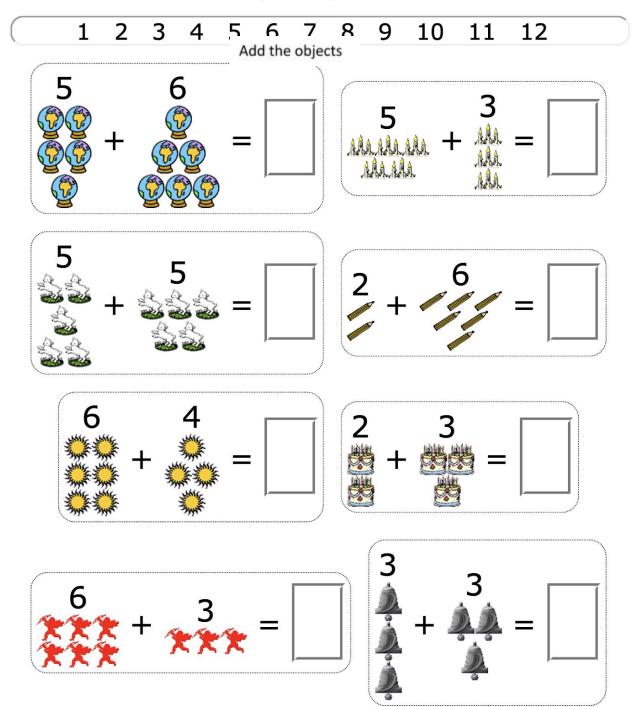
Materials:

An outdoor space that is large enough to run a few steps. Use any materials that are available to designate certain spots or that may challenge a child physically or mentally. Instructions:

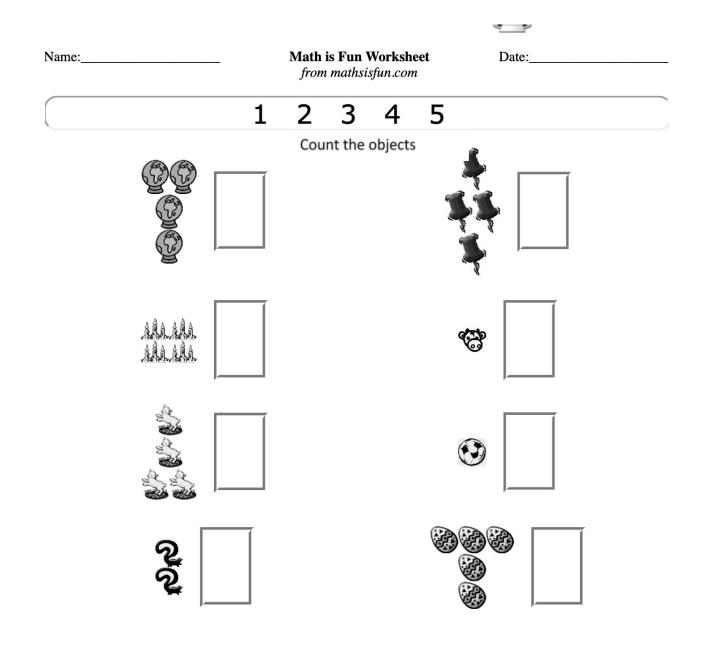
Set up an obstacle course. This can be real simple using things found outside or at home. If there are wooden logs or blocks use those to make steps, jumps, balance beams, or bars to crawl under. Use a stick to mark a start and finish line. If playing outside on dirt, use a stick to draw different shapes in the dirt and mark designate certain activities at each marker. If playing on concrete, chalk or rocks can be used to mark certain areas. Some exercises to do in these marked areas may be to immitage different animals like from A to B spring as fast as a Cheetah, flap your arms like a bird, hop on one leg, walk on your tippy toes, skip, jump as far as you can, rub your belly and pat your head. There can also be questions along the way that serve as check points in order to get to the next point. This could be things like add 5+19 or spell House. The difficulty can vary depending on the age of the child. Before each child begins, they must correctly answer a math or language question. One child runs the course at a time while other players count how long it takes for the child to finish. The clap while counting to keep a steady rhythm. Each child can try and improve their time each time they run the course.

Vorksheets				
ame:		Fun Work athsisfun.c		Date:
1	2	34	5	
Complet	e the nu	umber	sequen	ce
, 4,	-		2,	3,
, 2, 3			3,	, 5
1,, 3			,	, 2,
, 3, 4				, 3,
lame:		<b>i is Fun W</b> m mathsisf		Date:
		7 numb	89 er seque	
, 10, _			8	8, 9,
, 5, 0	6		9	),, 11
4,,	6			6, 7,
8,, 1	.0		_	_, 5,

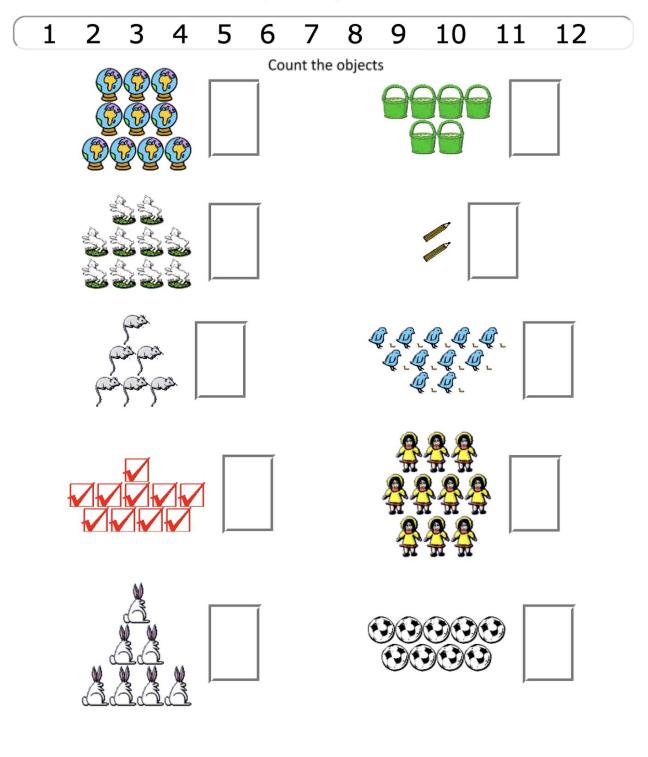
from mathsisfun.com



"print your own worksheets at mathsisfun.com"	Date:
try Poetry Poetry Poetry	
<b>\$ \$ \$</b>	
5	
<b>~~~~</b> ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
We will show the	
<b>&amp;                                    </b>	
	ry Poetry Poe



jrom mainsisjun.com



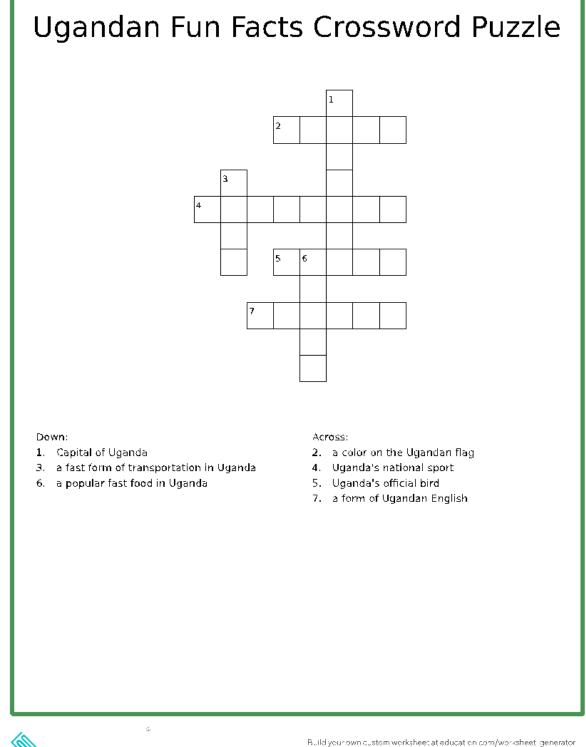
#### Additional Tips:

Math Tips:

- 1. Sorting and classifying: organizing objects according to their properties (size, color, shape, texture)
  - EX: Provide a container of objects such as buttons, bottle caps, rocks, large seed, leaves, squares of cloth. Ask children to sort them by one characteristic (such as color, size, shape, texture). Then, ask them to find another way to sort the objects.
  - Challenge: Ask the children to compare the two groups of which has more and less objects
- Recognizing patterns caregiver or child claps/snaps a variety of patterns then others repeat and continue the pattern. Or using objects make a pattern and child has to copy it, or ask what comes next. Make a square/triangle out of matchsticks and ask how many it takes to make 1, 2, 3 of those shapes
  - EX: 1. Caregiver or child claps or snaps a pattern and the other must repeat and continue the pattern
  - o Ex 2: Using objects (buttons, bottle caps, rocks, large seeds, leaves, sticks) make a simple pattern (large-small, small-large). Ask the children to guess what comes next. Can ask children to make a different pattern and repeat. Patterns can get complex over time
  - o Ex 3: Make a triangle with sticks/matchsticks. Ask how many sticks it takes to make one triangle, two triangles, 3 triangles. Ask what the pattern is
- 3. Counting and writing numerals
  - Ex 1: Ask children to count any household items or items outside. Can have them go explore and count, or caregivers can provide materials for them to count.
  - Ex 2: Count a sequence and then do something with the body (Ex: 1-2-3-4 then spin, repeat). Let them try it
  - o Challenge: Ask the kids to do this pattern backwards
  - o Challenge: In a grouping and sorting activity, can ask them to count how many objects are in each category
  - Ex 3: write out or say 3-4 numbers and ask the children to rank them from highest to lowest, lowest to highest
- 4. Comparing to understand the concept of equal, more or less, and then to learn to compare. Can give child a string and find something the same length as that, then ask them to find something shorter or longer. Use water container and get objects and ask kids to predict what will float and what will sink
  - Ex 1: Give child a string or stick. Ask them to find something the same length as the string. Then, ask them to find something shorter or longer.
  - o Ex 2: using water buckets, give children different objects and ask them to guess which objects will sink or float

- 5. Understanding numbers at a concept level explore concrete materials and relating numbers to problem situations explore numbers 1-10 with many different materials to
  - Ex 1: Use any small object, count out a specific number (ex 5, 7) and as the children to explore and describe the different arrangements for that specific number of objects
  - Ex 2: Using cubes, toothpicks, sticks, explore the different designs possible with that specific number
  - o Ex 3: Give children 6 (or any number) of cubes or buttons or any material;. Ask them to solve different problems: make 2 stacks of 3, make 3 stacks of 2, make 1 stack of 6, make 6 stacks of 1, etc
- 6. Recording numbers at the symbolic level
  - Ex 1: give child string or sticks. Ask them to make a shape. Ask then to count the number of sides. Can ask them to draw on paper and pencil if available
  - o Ex 2: Can do activities relating to numbers at a concept level (ex 5) but then can write down addition and subtraction problems to show what they did to sort hte different categories
  - Ex 3: Can give child an addition or subtraction problem and child has to come up with a story that fits the problem
- 7. Shape and Space
  - o Ex 1: Caregiver creates design with any material. Children try to replicate the design. Can count number of each shape used. Ex: make design with 3 triangles and 3 squares?
  - Ex 2: Give child a shape and ask them to go inside or outside and find objects that are those shapes. Can draw the objects they find, can describe them if dont have paper and pencil
  - o Ex 3: use objects for measuring. How many pieces of this string is the length of this room? Is the room wider or longer? How many buttons is this stick?
  - o Ex 4: using specific number of small sticks, ask child to create a larger
  - o Use water container and get objects and ask kids to predict what will float and what will sink

# <u>Language</u>



Education.com

Build your own custom worksheet at education com/worksheet igenerator © 2007 - 2020 Education.com

Crossword answers:

- 1. Kampala
- 2. Black
- 3. Boda
- 4. Football
- 5. Crane
- 6. Rolex
- 7. Uglish

**Creative Writing:** Provide students with a theme (Ex: sports, family, things the like) and challenge them to create a story, poem or song and share it with their family and friends.

#### Math/Language Challenge Obstacle Course (same as the one listed under Math Games) Materials:

An outdoor space that is large enough to run a few steps. Use any materials that are available to designate certain spots or that may challenge a child physically or mentally. Instructions:

Set up an obstacle course. This can be real simple using things found outside or at home. If there are wooden logs or blocks use those to make steps, jumps, balance beams, or bars to crawl under. Use a stick to mark a start and finish line. If playing outside on dirt, use a stick to draw different shapes in the dirt and mark designate certain activities at each marker. If playing on concrete, chalk or rocks can be used to mark certain areas. Some exercises to do in these marked areas are imitating different animals for example: from point A to B sprint as fast as a Cheetah, flap your arms like a bird, hop on one leg, walk on your tippy toes, skip, jump as far as you can, rub your belly and pat your head. There can also be questions along the way that serve as check points in order to get to the next obstacle. This could be things like add 5+19 or spell "house". The difficulty can vary depending on the age of the child. Before each child begins, they must correctly answer a math or language question. One child runs the course at a time while other players count how long it takes for the child to finish. Those counting can clap to keep a steady rhythm. Each child can try and improve their time each time they run the course.