



# n e w s

news from the trunk

Thursday, March 9, 2017



## The Elementary School Musical Performance

KAS 60th Birthday Celebration  
In Music, Song and Dance



Thursday, March 9, 2017 | 7:00pm

**PLEASE NOTE:** KAS closes for the 'Spring Break' on March 16, 2:50pm  
School reopens on Monday March 27

## Superintendent's Message

Dear Parents and Guardians,

If you were able to attend Movie Night this past weekend with your child, or your child attended without you, you probably know or heard about how successful the event was. Movie Night was organized by teachers Ms. Juliane Centers, Ms. Charlene Joyce and their students. The proceeds of the event are going to help the Batwa people of Uganda. They have been displaced from their village and have lost their means of income. Thank you teachers and students for a wonderful Movie Night and service fundraising event.

There is a deep sense of satisfaction that students have when they are able to help others. We call that satisfaction and desire to help a fellow human being altruism. The dictionary definition of altruism is, "The belief in or practice of disinterested and selfless concern for the well-being of others". Some say that altruism is 'inborn' or naturally a part of our personalities from birth. Others argue that is more learned than natural.

Wherever you stand in this debate of whether altruism is learned or inborn, we know as parents and teachers that if students are given the opportunity to help others they will gladly do that and not expect anything in return. They do it for the satisfaction that comes from feeling a sense of support for others, a sense of commonness of purpose, and a sense of care for a fellow human being.

KAS students and staff get very high marks for their practice of altruism. Movie Night is just one example of many activities at KAS that give practical meaning to what it means to be altruistic. I am proud to be part of such a caring and altruistic school community. I am proud of our students and of our teachers.

I wish you a pleasant weekend.

Sincerely,

**Dr. Rob Beck**  
Superintendent

## News From Grade 4

Values we hold very dear here at KAS are cooperation and teamwork. The 4th grade is no exception.

We practice working together everyday. Everything about the way our class is run is centered around working together and problem solving. From the seating arrangements to the math lessons, one can see collaboration and group thinking all day long.

We believe that we are all one big family and strive to instill this in our students. If students are having trouble getting along we use a mediation method in which we sit both of the students down and help them air their differences in a constructive and patient manner. The seating arrangements work in much the same way.

The students are seated in groups, or pods, which allows them easy access to each other. Students that might be having a hard time getting along are sometimes seated in the same group and with teacher guidance are able to overcome their differences and learn to work together. Teachers and students are hard at work helping make the world a better place one cooperative learning experience at a time.

**Alissandra Butzbach**  
Grade 4 Teacher

## A Message from the Early Childhood & Elementary Principal

Dear Parents and Community Members,

The Spring Musical is tonight! The theme, "KAS 60th Birthday Celebration In Music, Song, and Dance," will bring a smile to your face and a tap to your feet as you remember all the fun, beautiful, and sometimes silly music that has sounded in the wide world as Khartoum American School was born in 1957 and went through its infancy, youth, adulthood, and is now in its mature years.

Although the life cycle of a school or other organization follows roughly many of the same developmental stages as that of a human life, the time span can be much, much longer, and we look forward, to wishing KAS a happy birthday for many, many decades to come. Just think, for KAS's 100th birthday celebration our current graduating senior class will be my age right now, and I will be 99, if I'm still around! And if I am, I hope to make it to Khartoum to join in the celebration then, as I'm fortunate to be here now.

Our students from Kindergarten through High School have been working diligently for many weeks preparing this special evening for the enjoyment of the KAS community, and we are all looking forward to seeing you there! Students should arrive on campus by 6pm, and our show will begin at 7pm. Please be on time so you don't miss a single song in tonight's performance!

### Phil Centers

Early Childhood Center & Elementary Principal

## NEWS FROM THE SPORTS DEPARTMENT

# Time to swim!



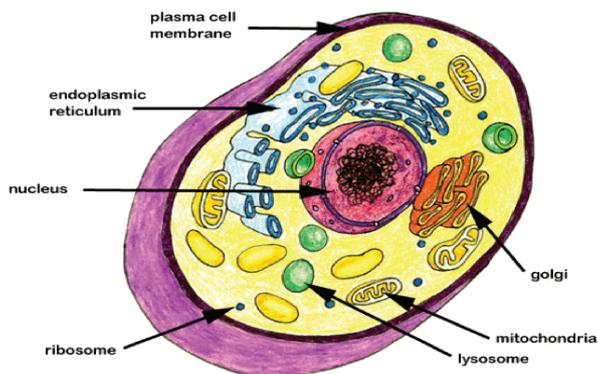
Interested in joining the KAS swim team? If so, there will be tryouts on Sunday, March 12th from 3:00-4:00pm. All students in grades 3-12 are welcome to participate. Practice days for the swim team will be on Mondays, 6:30am-7:45am, Tuesdays from 3:00pm-5:00pm and on Thursdays from 3:00-4:00. Swim Practice will start after spring break. Our next swim meet will take place at KICS on April 23rd. See you there!

### Soccer

The soccer season is winding down. Next week will be extremely busy. KAS will host the Middle School soccer tournament on Monday, March 13th. On Tuesday, March 14th KICS will host the senior tournament. Thank you coach Khalid, coach Doug, coach Katie and coach Sarah for all of your hard work throughout the season. A special thanks to all of the KAS athletes that helped make this a great soccer season. Go KAS!

### KAS Athletics

## DID YOU KNOW?!



### The world of the Very Small: relative size in cellular structure

We usually think of the cells that make up living organisms as very small – and they are. But even at their very diminutive size biological cells are very busy places that have a vast number of complex chemical processes going on inside of them. This article is not about those processes, but rather about thinking of the relative size of a cell compared to the chemicals that are inside of it and taking part in those processes.

Biological cells come in a vast array of shapes and sizes. In order to get an idea of the relative size of the organelles in the cell to the cell as a whole, one must first decide on what kind of cell one is going to look at. In this case we will look at a cell making up a human animal. Still, the size range is immense. The cells that make up the long skeletal muscles can be 30 cm long, though only 10 – 100 micrometers ( $\mu\text{m}$ ) in diameter, while the smallest human cells are disk-shaped and roughly  $5 \times 3 \mu\text{m}$  (a micrometer is 0.000001 meters). For the purposes of this paper, however, our cell will be an idealized, “average” human cell, roughly spherical in shape and 20  $\mu\text{m}$  in diameter. We will also need something to compare the cell and its organelles to, for instance a sodium ( $\text{Na}^{2+}$ ) ion with an atomic radius of 0.98 Å (Angstroms, 10-10 m), or about 0.2 nm (nanometer, 10-9 m) in diameter and a scale of say 1 m = 1  $\mu\text{m}$ . This scale would make our typical cell a spheroid about 20 meters in diameter, and our sodium ion that is wandering about inside a speck only 0.2 millimeters across. That is a difference in size of five orders of magnitude (five powers of 10).

The first thing that our  $\text{Na}^{2+}$  ion would encounter would be the cell’s outer membrane, a double-walled, flexible covering 7 nm thick, or thirty-five times thicker than the width of the ion. The interior volume of the cell that

is not taken up with the cell’s organelles is filled with cytoplasm, a viscous fluid in which the organelles are suspended. Speaking of interior volumes, the interior volume of the cell at this scale would be about 4189  $\text{m}^3$ , while that of the sodium ion would be about  $4.2 \times 10^{-12} \text{m}^3$ , a difference of 15 orders of magnitude. Acting as bracing and a path for transport proteins to use are microtubules, structures of various lengths and 25 nm in diameter, or a bit more than two orders of magnitude greater in diameter than the ion. At almost exactly two orders of magnitude greater in size are free ribosomes, spherical organelles that are 20 nm in diameter. Next up the size scale would be the lysosomes and peroxisomes, both at about 200 nm in diameter or three orders of magnitude greater in size than our lone ion. The mitochondria, the Energizer® batteries of cell, that interestingly enough have about the same shape as AA batteries, would be roughly 750 nm in diameter and 2 meters long. The sodium ion, by comparison, would look like the merest, pinprick dot on its surface. The Golgi apparatus is a bit hard to put a size on. To our wandering sodium ion it would look like a stack of disks of somewhat uneven thickness that have a bit of space between them, but that bulge out in places to interconnect. The disks would be about 500 nm thick and range in diameter from about 750 nm to a couple of micrometers. Another organelle that is hard to put a size on is the endoplasmic reticulum. This is often the largest organelle in a cell. It is a double-walled, membranous structure that folds back and forth upon itself and wraps around the nucleus of the cell. The total surface area of the endoplasmic reticulum can be 10-20 times that of the surface area of the cell itself. Given the dimensions of our cell that would mean that the surface area of the ER would be between 12,600 and 25,200 square micrometers of membrane. Last, but certainly not least, is the nucleus of the cell. This is another roughly spherical organelle that, in this case, is about 12  $\mu\text{m}$  in diameter. Comparing diameters of the nucleus (12  $\mu\text{m}$ ) and the sodium ion (0.2nm) that would make the nucleus 60,000 times larger.

Although we tend to think of cells as incredibly small, compared to the inorganic ions and organic molecule raw materials that the cell uses to repair, reproduce, and grow itself, the cell is vast. As only one example the sucrose ring molecule is about 0.85 nm in diameter, or only about four times the size of the  $\text{Na}^{2+}$  ion we have been using for size comparison. And now you know!

**Marc Scott**  
MS/HS Math Teacher

## Elementary Assembly Masters This Week’s Winners



Ahmed  
Magzoub  
Grade 4

Murad  
Ali  
Grade 2

Hala  
Eltigani  
Grade 2

Sam  
Riziq  
Kindergarten

Pukhrabam  
Tenison Singh  
Kindergarten

## SAYING OF THE WEEK

These days **Swing The Lead** is a metaphor used to describe somebody who is avoiding work by giving the appearance of toiling, but not actually doing anything. It is a phrase with its origins in naval history. Aboard ship it was the job of a leadsman to calculate the depth of water around a coastline by dropping a lead weight attached to a measuring line at the bow end. As the easiest job on board it was usually given to a sick or injured seaman and many feigned illness in an attempt to secure such light work. The phrase came ashore and is now used to describe anybody making excuses or simply going through the motions.

**Minette van der Bijl**  
High School English Department