APRENDER SEMPRE

5º ANO
ENSINO FUNDAMENTAL

MATEMÁTICA

Dear student and caregiver,

To prevent the dissemination of the new coronavirus, and to preserve everyone's health, school activities were paralyzed to reduce the circulation of people. In order not to interrupt your school studies even during the period of suspension of classes, the State Secretary of Education has prepared some materials to support you at this moment.

This material is divided in two parts: one on Portuguese Language and the other one in Mathematics. Here you will find activities to enhance your knowledge. Also, two inserts are included: one with information about COVID-19 and the other one with guidelines and suggestions for you to organize a study routine and continue learning, even without going to school!

When you return to school, you must hand over the activities to your teacher. That way you can have feedback on what you managed to advance and be supported to learn even more!

Good luck with your studies!

Nome da Escola: _____

Nome do Aluno: _____

Data: __/___/2020   **Ano/Turma 4ª Ano EF _____**

Sequence 1 – The Brazilian population

Alex and Sofia noticed the presence of large numbers in situations that involve the Brazilian population. They did not have any idea that the number of inhabitants in our country was so big. They needed mathematical knowledge to read, write, and compare this data. Shall we tag along them in their discoveries?

Ilustração: Ana Rita da Costa

ACTIVITY 1

Alex discovered that on the 4th of September 2017 at 21h 48min Brazil had a population of approximately, 207 954 206 people and that at that very moment, the number of cell phone lines was of 242 118 177.

Fonte: https://ww2.ibge.gov.br/apps/populacao/projecao/>. Acesso em 9 set. 2017.

http://www.jb.com.br/pais/noticias/2017/07/12/anatel-registra-diminuicao-do-numero-de-linhas-de-celular-em-maio/

1. Read the numbers out loud and them write them down:

a. 207 954 206 – _____
b. 242 118 177 – _____

2. In Brazil, are there more people or cell phone numbers? Explain how you got to that conclusion:

ACTIVITY 2

Alex was not used to reading aloud "grandes números". His cousin explained to him that to render the reading and writing easier it is necessary to know which position each digit occupies in the number, she also said that our numeral system is formed by orders (units, tens, and hundreds) grouped from right to left in classes and she showed him the Table of Classes and Orders.

4th Class			3rd Class			2nd Class			1st Class		
Billions			Millions			Thousands			Simple units		
12ª	11ª	10ª	9ª	8ª	7ª	6ª	5ª	4ª	3ª	2ª	1ª
C	D	U	C	D	U	C	D	U	C	D	U

1. Now do like Sofia does: put the following numbers in the table of classes and orders. Then read those numbers and write them down:

a. 1 362 075 000 –_____

b. 536 000 401 – _____

c. 3 000 891 – _____

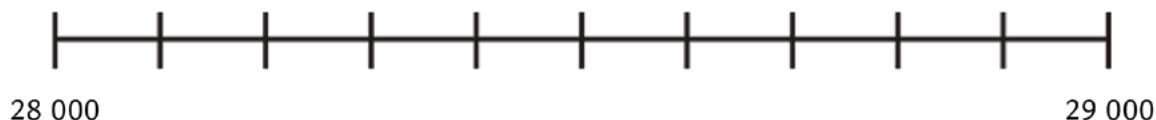**2.** Which of the numbers in item 1 can be approximated to:

a. 530 milhões - _____

b. 3milhões - _____

Alex's father said that the municipality of Santo Ângelo in Rio Grande do Sul had 78 836 inhabitants, but Alex read on the internet that the population of that municipality was of about 78 000 people. He was intrigued by that information.

3. Alex wondered: is the number 78 836 closer to 78 000 or to 79 000? Help him solve that question and justify your answer:

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4. Alex's teacher was working with approximations, rounding ups and the numbered line. She asked the students to represent in the numbered line the gap between 28 000 to 29 000, marking from 100 on 100. Help Alex with this task.

28 000   29 000

5. Alex discovered that the numbered line helps to perceive the approximation of numbers, then he concluded that:

a.   The number 28 279 is closer to 28 200 or to 28 300?

_____

b.   The number 28 512 is closer to 28 500 or to 28 600?

_____

ACTIVITY 3

Sofia challenged his cousin Alex to discover the four most populated states in Brazil in 2016. He found on the internet that Rio de Janeiro had 16 369 000 inhabitants; São Paulo had 45 094 866; Bahia, 15 344 447 and Minas Gerais, 21 119 536. Alex found those numbers on the internet in October 2017. Sofia decided to present the results of his research on a table with the States organized in the decreasing order of population.

Fonte: agenciadenoticias.ibge.gov.br

Ilustração: Joseane A. Ferreira

1. Help Sofia organize that table.

State				
Population in millions				

2. Give Sofia's table a title:

_____

3. What is the source of the research elaborated?

_____

ACTIVITY 4

Sofia found a table on the internet that presents the approximated increase of the Brazilian population between the years of 2010 and 2016, by region.

Números de Habitantes		
Regiões Brasileiras	2010	2015/ 2016
Norte	15 865 678	17 707 783
Nordeste	53 078 137	56 915 936
Sudeste	80 353 724	85 356 952
Sul	27 384 815	29 016 114
Centro-Oeste	14 050 340	15 660 998
Brasil	190 732 694	204 657 773

Fonte: https://www.ibge.gov.br. Acesso em 4 out. 2017

Based on the numbers presented, she made some discoveries but forgot to write them down. Help her with that endeavor:

1. The Brazilian region with the largest number of inhabitants in 2015 / 2016 was:

_____

_____

2. She even discovered that in 2010 the region with the least number of inhabitants was:

_____

_____

3. A good title for the table Sofia found could be…

_____

_____

4. Using mental calculation and approximation, discover which Brazilian region had the highest population growth rate in the period from 2010 a 2016. Justify your answer:

_____

_____

5. Discover the difference between the number of inhabitants in Brazil in 2010 and in 2015/2016. Justify your answer.

Sequence 2 – A visit to the touristic places of the city

Alex and Sofia wanted to visit some touristic places in the city of São Paulo. Alex created schemes to show the location of those places to his cousin. To understand Alex's schemes, you are going to study the location and the movement of points on the Cartesian plane.

ACTIVITY 1

Alex wanted to visit Museu do Ipiranga and he saw on the internet some information about it. The Museu is undergoing reformations for the commemoration of the bicentenário da Independência do Brasil that will happen in 2022. Even without being able to enter the Museum, Alex decided to visit the place. He created a scheme with the location of that museu for Sofia to use, in case she decided to visit it. See how it turned out
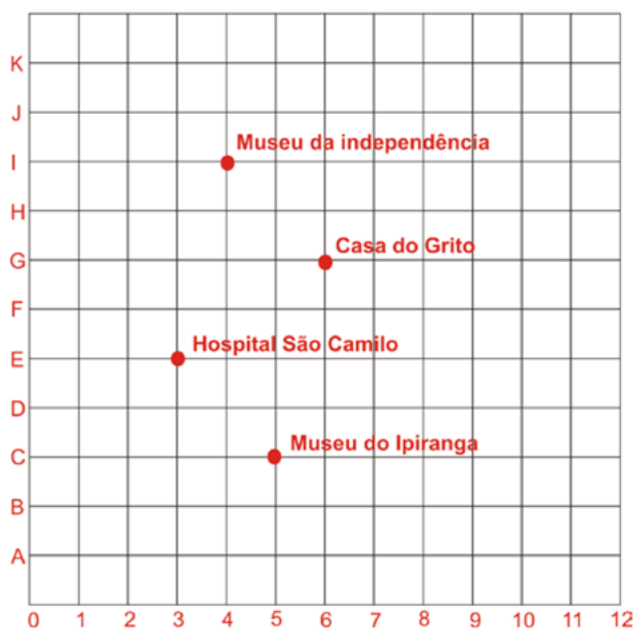

Ilustração: Joseane A. Ferreira

1. The Museu do Ipiranga in located at the point (5, C). According to that scheme, which reference point is the closest to the Museu do Ipiranga?

2. Indicate the points of location:

a. Casa do Grito _____

b. Museu da Independência _____

ACTIVITY 2

After visiting the museu, Alex went to see the Catedral da Sé, downtown São Paulo. When he got off the bus he discovered that there were other touristic places near and he decided to visit them. Alex created the scheme below for Sofia and he located Metrô Sé on point (8, D).
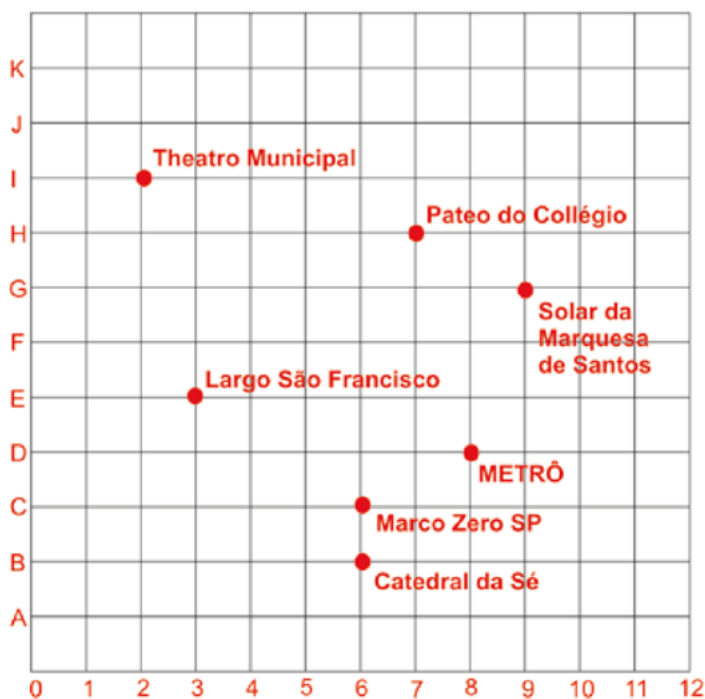

Ilustração: Joseane A. Ferreira

1. Locate other touristic points from that scheme, using coordinate pairs:

Catedral da Sé	Largo São Francisco	Solar da Marquesa de Santos	Pateo do Collegio	Theatro Municipal

2. Alex explained to Sofia that each square on the grid corresponds to a block. Help Sofia discover how to get from Metrô Sé until the Solar da Marquesa de Santos.

ACTIVITY 3

Alex proposed to Sofia a card with a challenge that he won when he visited one of the touristic places. Sofia should discover how to find her way out of the labyrinth and then describe the route she followed.

1. Now it is you time! Do like Sofia, draw the route to find the way out walking through the squares.
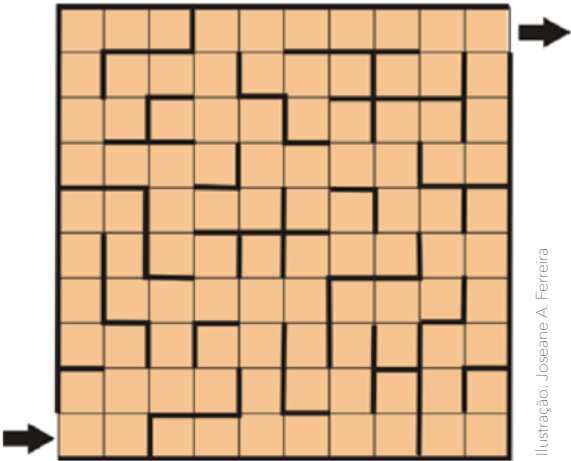

Ilustração: Joseane A. Ferreira

2. Describe on the following space the route that you followed to find your way out of the labyrinth:

Sequence 3 - The largest football stadiums in Brazil

In this sequence, you will tag along Alex and Sofia's discoveries about the largest football stadiums in Brazil. You will also solve several types of problems, even some in which it is necessary to choose data on tables with simple or multiple items, besides calculating the result of the operations.

ACTIVITY 1

Alex is very curious and is always researching the location of stadiums and its public capacity for spectacles. He found some data from 2016 that indicate the position of the four biggest Brazilian stadiums, their location and capacity. Observe the table:

Capacity of the largest Brazilian stadiums

Position	Stadium	City	Capacity
1°	Maracanã	Rio de Janeiro	78 838
2°	Mané Garrincha	Brasília	72 788
3°	Morumbi	São Paulo	72 039
4°	Castelão	Fortaleza	63 903

1. What is the approximate difference between the capacities of the stadiums of Morumbi and Maracanã? Register your thoughts.

2. How many football fans the Maracanã stadium holds over the Mané Garrincha stadium?

ACTIVITY 2

In his research, Alex discovered some other things and wrote them down:

City	Stadium	Capacity
Teresina	Albertão	52 296
Belo Horizonte	Mineirão	61 846
Recife	Arruda	60 044

1. Estimate the capacity of the two stadiums, Albertão and Arruda together. Then calculate and verify if your estimative was correct.

2. At Mineirão stadium there will be another game, and 57 500 tickets were already sold. How many tickets can still be sold to reach the stadium's maximum capacity?
Explain your reasoning.

ACTIVITY 3

Sofia lives in Itaquera and near her house is located the stadium known as "Arena Corinthians", which is quite large and has a capacity for many football fans. She heard that in some championships the number of football fans was of about 40 000 spectators, on average. Since she is very curious, she researched to discover the average number of football fans in some of the football championships. Observe what she found:
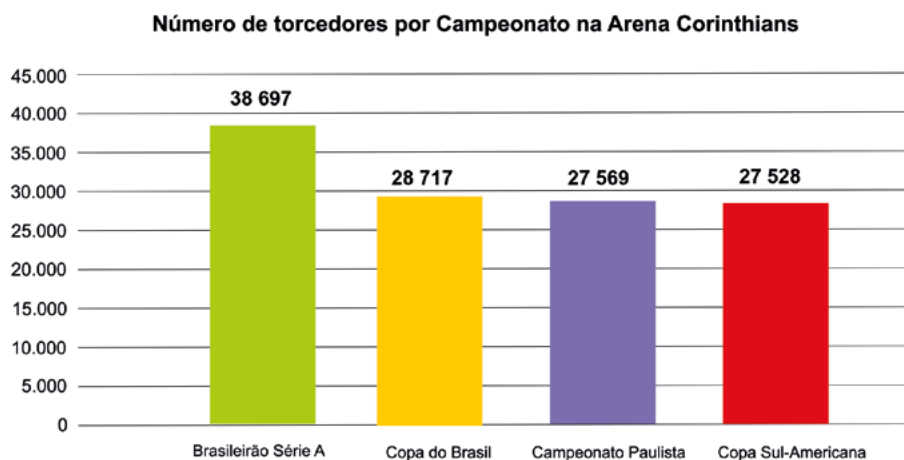
Ilustração: Ana Rita da Costa

Número de torcedores por Campeonato na Arena Corinthians

Ilustração: Joseane A. Ferreira

1. Sofia learned that it is possible to present the same data in tables and graphs. From the analysis of the data in the graph she thought about creating a table. Help her in this endeavor.

2. Sofia created some problems to use the data presented on the column graph and asked Alex to solve them by approximation, using estimates and then verifying the result with help from a calculator. Help Alex find those solutions.

a. How many football fans watched the Brasileirão and the Copa do Brasil?

b. What is the total of football fans that watched the Campeonato Paulista and the Copa Sul-Americana?

c. What is the difference between the number of football fans at Brasileirão from those at the Copa Sul-Americana?

d. How many less football fans were there at the Campeonato Paulista in relation to the Copa do Brasil?

e. In total, how many football fans participated in the four championships at the Arena Corinthians?

ACTIVITY 4

Alex was watching a football game from the Brazilian championship on TV. The commentator said that in such a rainy day there had been sold 4 536 full-price tickets and 2 157 half-price tickets. Alex and Sofia calculated how many spectators were at the stadium. See how they did:

Ilustração: NUCA

1. Now calculate the result of the additions by using different proceedings, then verify your answer by using the calculator.

947 + 639 =		1 749 + 467 =	

See how the kids did the subtraction: 1 753 – 438

Ilustração: NUCA

2. Now calculate the result of the subtraction using different ways, then verify your result with the aid of a calculator.

8 591 – 1 278 =

3. Solve using the way you choose:

12 305 + 8 076 =	12 005 – 8 976 =	987 + 1 034 =	2 030 – 987 =

Sequence 4 – Measuring buildings, animals, and children

In this sequence you will solve problems involving longitude, mass and capacity measurements systems and the units commonly used everyday. You will also solve problems with the data presented in tables. We will accompany the kids on their discoveries.

ACTIVITY 1

Surfing on the internet on the 4th of October, Alex entered the website "Top 10+" and found out that Burj Khalifah is the highest building in the world, and that it measures 828 meters. How about that? A building that is almost a kilometer high? But Alex found other skyscrapers and created a table. See:

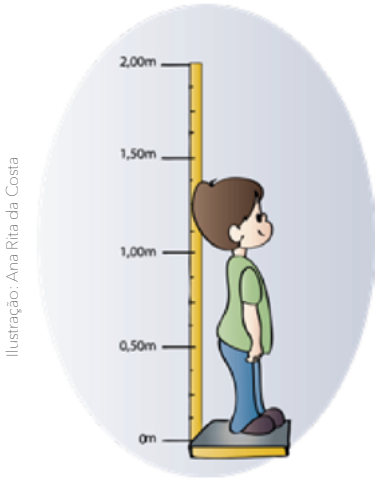| Position	Building	Height	Floors	Location
1°	Burj Khalifa	828 m	163	Dubai (United Arab Emirates)
2°	Shanghai Tower	632 m	128	Xangai (China)
3°	Abraj al Bait	601 m	120	Meca (Saudi Arabia)

Alex also discovered that in Brazil the highest building is the Orion Business and Heath Complex, which is located in the state of Goiás. This building is 191 meters tall and has 50 floors.

1. How many more meters does the Burj Khalifa have than the Orion Business and Heath Complex?

2. How many floors does the Orion Busines and Heath Complex have less, compared to the Khalifa?

ACTIVITY 2

On the week of the child, Sofia went with her parents and colleagues to Santa Catarina and saw the largest theme park in Latin America. She noted that the minimum high required to go in the carousel was 1m 50cm, as next to the ride there was a measurement bar. So, she decided to create a table to register hers and her colleagues' heights to see if everyone could ride the carousel.

Ilustração: Ana Rita da Costa

Child	Height
Sofia	1m 52cm
Mariana	1m 48cm
Talita	1m 65cm
Vinicius	1m 55cm
Alex	1m 50cm

1. Does every child have the required height to ride the carousel? Explain your reasoning.

2. What is the difference between the height of the shortest and the tallest child? Give your answer in cm.

3. Still using the information on Sofia's table, how many centimeters is the shortest child below the minimum required height to enter the carousel?

4. How much does the shortest child need to reach the height of 1 m 90 cm? Give your answer in cm.

5. What is the difference between the height of Sofia and that of her cousin Alex?