ENGLISH

1. Prepare a colourful scroll from the poem - 'The BROOK' depicting its journey.
   Use a chart paper (6”x 30”)

2. Read the first ten chapters of the Supplementary Reader – 'THREE MEN IN A BOAT' by
   JEROME K. JEROME and design an illustrated scrap book on the author and the characters.
   Include brief character-sketches of the characters that you come across in these chapters.

3. Pick up one or more books mentioned below and read for pleasure.
   i) Frankenstein – Mary Shelley
   ii) Heidi – Johanna Spyri

MATHEMATICS

NUMBER SYSTEM AND POLYNOMIALS

SECTION A

Q.1. Find any six rational numbers between 3 and 4.

Q.2. If \( 27^x = \frac{9}{3x} \), find x.

Q.3. Represent \( \sqrt{7} \) and \( \sqrt{6.7} \) on number line.

Q.4. Write the rationalizing factor of \( 5 + \sqrt{2} \).

Q.5. Evaluate the following:
   (a) \( (16^{-1/5})^{5/2} \)   (b) \( (0.001)^{1/3} \)   (c) \( (\sqrt{5})^3(\sqrt{2})^{-3} \)

Q.6. If \( f(x) = 2x^3 - 13x^2 + 17x + 12 \), find (i) \( f(2) \) (ii) \( f(-3) \) (iii) \( f(0) \)
Q.7. If \( x = 3 - 2\sqrt{2} \), find \( \frac{x^2 + 1}{x^2} \).

Q.8. In each of the following determine rational numbers \( a \) and \( b \):

(a) \( \frac{5 + \sqrt{3}}{7 - 4\sqrt{3}} = 47a + b\sqrt{3} \)

(b) \( \frac{\sqrt{3} - 1}{\sqrt{3} + 1} = a + b\sqrt{3} \).

Q.9. Simplify each of the following:

(a) \( (4 + \sqrt{7})(3 + \sqrt{2}) \)

(b) \( (2\sqrt{5} + 3\sqrt{2})^2 \)

Q.10. Find the remainder, when \( x^3 - a^2x + x + 2 \) is divided by \( x - a \).

Q.11. Factorise the following:

(i) \( x^2 + 3\sqrt{3}x + 6 \)

(ii) \( x^2 + y - xy - x \)

Q.12. For what value of ‘\( a \)’ is \( 2x^3 + ax^2 + 11x + a + 3 \) is exactly divisible by \( 2x - 1 \)?

Q.13. If \( ax^3 + bx^2 + x - 6 \) has \( x + 2 \) as a factor and leaves a remainder 4 when divided by \( x - 2 \), find the value of ‘\( a \)’ and ‘\( b \)’.

Q.14. Factorise the following polynomials:

(i) \( x^3 + 6x^2 + 11x + 6 \)

(ii) \( 3x^3 - x^2 - 3x + 1 \)

(iii) \( y^3 - 7y + 6 \)

Q.15. Show that \( x - 2 \) is a factor of the polynomial \( f(x) = 2x^3 - 3x^2 - 17x + 30 \) and hence factorise \( f(x) \).

Q.16. If both \( x - 2 \) and \( x - \frac{1}{2} \) are factors of \( px^2 + 5x + r \), show that \( p = r \).

Q.17. The polynomials \( ax^3 + bx^2 - 13 \) and \( 2x^3 - 5x + a \) are divided by \( x + 2 \). If the remainder is same in each case, find the value of ‘\( a \)’.

Q.18. Find the value of ‘\( k \)’ if \( x - 3 \) is a factor of \( k^2x^3 - kx^2 + 3kx - k \).

Q.19. Express \( 15.7\overline{12} \) in \( \frac{p}{q} \) form, where \( p \) and \( q \) are integers and \( q \neq 0 \).
Q.20. Simplify: \[ \frac{3\sqrt{2} - 2\sqrt{3} + \sqrt{12}}{3\sqrt{2} + 2\sqrt{3} - \sqrt{2}} \]

Q.21. Find the value of x in the following:
   (i) \[ 2^{5x} \cdot 2^{x^2} = 2^{20} \]  
   (ii) \[ (2^3)^4 = (2^2)^x \]
   (iii) \[ 2^{x-5} \times 5^{x-4} = 5 \]

Q.22. Simplify:
   (i) \[ 64^{-1/3} \cdot (64^{1/3} - 64^{2/3}) \]
   (ii) \[ 9^{1/3} \times 27^{-1/2} \]
   (iii) \[ (1^3 + 2^3 + 3^3)^{1/2} \]
   (iv) \[ (5^2 + 12^2)^{1/2} \]

Q.23. Show that:
\[ (x+a)^2 \cdot (x^b+c)^2 \cdot (x^c+a)^2 = 1 \]
\[ (x^a \cdot x^b \cdot x^c)^4 \]

Q.24. Examine, whether the following numbers are rational or irrational:
   (i) \[ (\sqrt{2} + 2)^2 \]
   (ii) \[ (5+\sqrt{5})(5-\sqrt{5}) \]

Q.25. Find the value to three places of decimal; of each of the following. It is given that \(\sqrt{2} = 1.414\), \(\sqrt{3} = 1.732\), \(\sqrt{5} = 2.236\) and \(\sqrt{10} = 3.162\) (approx.)
   (i) \[ \frac{2-\sqrt{3}}{\sqrt{3}} \]
   (ii) \[ \frac{\sqrt{10} - \sqrt{5}}{\sqrt{2}} \]

SECTION B

Do the following activities in groups as mentioned below:

(a) Make a model of a triangular pyramid. Find its curved surface area and total surface area. Make a PowerPoint presentation depicting its applications in ancient or modern structures. (Roll no. 1 to 10)
(b) Make a model of a square pyramid. Find its curved surface area and total surface area. Make a PowerPoint presentation depicting its applications in ancient or modern structures. (Roll no. 11 to 20)
(c) Make a model of a rectangular pyramid. Find its curved surface area and total surface area. Make a PowerPoint presentation depicting its applications in ancient or modern structures. (Roll no. 21 to 30)
(d) Make a model of a pentagonal pyramid. Find its curved surface area and total surface area. Make a PowerPoint presentation depicting its applications in ancient or modern structures. (Roll no. 31 to 40)
(e) Make a model of a hexagonal pyramid. Find its curved surface area and total surface area. Make a PowerPoint presentation depicting its applications in ancient or modern structures. (Roll no. 41 to 50)
GENERAL SCIENCE

As part of International School Award (ISA) activity, we are undertaking a project in Science – “Munching Mania”.

The project aims at creating awareness about unhealthy eating habits among children around the globe in various age groups and harmful effects/diseases caused by it. It aims to help the children to develop into healthy adults.

Students will collect data about types of food they eat in their age group and find out about the ‘food quality testing standards’ and organizations as prevalent in their countries. They will investigate about food adulteration and adulterants present in food used around the world and their harmful effects. Share simple tests that can be conducted to identify adulterants or contaminants and give suggestions to check the usage of these adulterants. Students will make a pictorial representation cum a brief account of different adulterants and their harmful effects in different countries (USA, UK, JAPAN, CHINA, INDIA and AUSTRALIA). Present your compiled work neatly in a scrap book.

Prepare a comparative study of the adulterants. You must present your collected data/information in the form of bar graph, pie chart, pictorial representation etc. Also prepare a PowerPoint presentation regarding the same.

Each student will research on the given adulterants according to the assigned roll numbers.

You have to present your work in the form of a comparative account of the given countries.

<table>
<thead>
<tr>
<th>ROLL NO.</th>
<th>FOOD ADULTERANTS FOUND IN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>TURMERIC, TEA</td>
</tr>
<tr>
<td>11-20</td>
<td>RED CHILLI POWDER, MILK</td>
</tr>
<tr>
<td>21-30</td>
<td>VEGETABLE OIL, SUGAR</td>
</tr>
<tr>
<td>31-40</td>
<td>BLACK PEPPER, JAGGERY</td>
</tr>
<tr>
<td>41 Onwards</td>
<td>PULSES, ASAFOETIDA, MUSTARD OIL</td>
</tr>
</tbody>
</table>
SOCIAL SCIENCE

Prepare a creative collage or poster on A3 size coloured sheet based on the festivals observed by the following countries:

- India-Diwali (Roll No.1-8)
- Japan-Obon (Roll No.9-16)
- Peru-Sun (Roll No.17-24)
- Ghana-Yam (Roll No.25-32)
- USA-Thanks Giving (Roll No.33-40)
- Portugal-Madeira Flower Festival (Roll No.41 onwards)

You are requested to do the activity based on the roll numbers mentioned above. It will be assessed on the basis of timely submission, neatness, originality, innovativeness and research.

Geography-Chapter 2, Physical Features of India

The Map list with a marked map for reference is provided. Students are requested to mark the places mentioned in the Maplist on Political maps of India. They should use the reference maps for accurate marking.

Instructions

- The map work has to be done only with pencil.
- The two maps have to be compiled in a folder and given to the teacher on the specified date of submission.
- Maps will be evaluated on the basis of accuracy, neatness and punctuality.
- The submission date is 15th of July, 2015
Apeejay School, NOIDA 2015-16
Class 9 - Social Science

Δ1 - K2
Δ2 - Kanchenjunga
Δ3 - Nanda Devi
Δ4 - Anai Mudi
Δ5 - Mt. Everest

= 6 - Bombila
= 7 - Shipkila

Coastal Strips
8 Coromandel coast
9 Northern Sircars
10 Malabar Coast
11 Konkan Coast

MAP 1

[Map of India with labeled landmarks and coastal areas]
**PEAKS**
1. K2
2. Mt. Kanchenjunga
3. Nanda Devi
4. Anaimudi
5. Mt. Everest

**PASSES**
6. Bomdi-La
7. Shipkila.

**COASTS STRIPS**
8. Coromandel,
9. Northern Circar,
10. Malabar
11. Konkan

**MOUNTAIN RANGES AND HILLS**
1. Zaskar range
2. Himadri range.
3. Shiwaliks
4. Aravallis.
5. Vindhyas.
7. Western Ghats.
8. Eastern ghats.
10. Naga hills
11. Mizo hills
12. Gir range.
GERMAN

1. MAKE A POWERPOINT PRESENTATION ON ONE OF THE FOLLOWING TOPICS
   a. Roll no 1-10 GENETIV
   b. Roll no 11-20 PERFEKT
   c. Roll no 21-30 IMPERATIVE
   d. Roll no 31-40 ACCUSATIVE
   e. Roll no 41-52 DATIVE

2. ON AN A4 SIZE SHEET, WRITE A PARAGRAH ON ANY ONE OF THE FOLLOWING TOPICS (120 WORDS)
   a. MEIN LETZTEN URLAUB
   b. WAS WIRST DU IN IHRER FREIZEIT MACHEN

FRENCH

1. Prepare a brochure on any city situated in France. (for eg.- Lyon, Paris, Bordeaux, Lille, etc)
2. Complete chapter- 1, 2, and 3 from workbook.
3. Revise all the verbs and conjugations done till date.

HINDI

1 छुट्टियों में प्रतिदिन सुबह उठकर पास के किसी बगीचे में जाइए, वहाँ खेलने के अपने अनुभव को 100 शब्दों में लिखिए।

2 एक पूरा का पाठ लगाई और उसे खाद-पानी देकर प्रतिदिन बढ़ता हुआ देखिए। अपने इस अनुभव को कविता, कहानी अथवा लेख के रूप में 100 शब्दों में लिखिए।

3 अपने घर की छत और बातकी में खड़े होकर वादलों में बनते चित्रों को देखिए,विंडिया,अन्य पक्षियों,पशुओं आदि की आवाजें सुनिए। अब अपने अनुभव को 100 शब्दों में लिखिए।

4 पढ़े गए पाठों में से उपसर्ग ,प्रत्यय तथा मुहावरे लिखिए।

5 एक फाइल के बनाई तथा इसे भली-भोंति सजाईए। ऊपर दिए गए सभी कार्यों को चित्रों से सजाइए। ए4 शीट पर सभी कार्य करने के बाद इन्हें फाइल का रूप दीजिए।
**SANSKRIT**

सरस्वती मणिका में से पृष्ठ संख्या- 19 से 23 तक अपठित गद्यांश करें।
पृष्ठ संख्या- 66 से 68 तक पत्र करें।
प्रथम पाँच चित्रावर्णन करें।
नोट- सभी कार्य संस्कृत कॉपी में करें।

**COMPUTER SCIENCE**

Make a colourful and decorative Website on the topic assigned as follows. The website should have a home page and provide 2-3 hyperlinks. Use all the tags covered in HTML.

<table>
<thead>
<tr>
<th>ROLLNO</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>Types of Networks</td>
</tr>
<tr>
<td>11-20</td>
<td>E-Commerce</td>
</tr>
<tr>
<td>21-30</td>
<td>Social Networking Websites</td>
</tr>
<tr>
<td>31-40</td>
<td>Social Responsibility and safe use of On-line Resources</td>
</tr>
<tr>
<td>41 ONWARDS</td>
<td>Safe surfing tips</td>
</tr>
</tbody>
</table>

You are required to submit a hardcopy and soft copy(on CD)
PHYSICAL FITNESS PROGRAMME FOR SUMMER BREAK

‘Day 1 to 3’

1. Walk - 15 minutes
2. Skipping - 50 times
3. Simple free hand exercise followed by stretching exercise
4. Cooling down

‘Day 4 to 6’

1. Jogging - 15 minutes
2. Rest - 5 minutes
3. Skipping - 100 times
4. Rest - 5 minutes
5. Simple free hand exercise followed by stretching exercise
6. Cooling down

‘Sunday Rest’

For third and fourth week

‘Day 1 to 3’

1. Fartlek- Running 3 minutes followed by 3 minutes walking. Repeat 3 times and no rest in between.
2. Rest - 5 minutes
3. Skipping - 50 times
4. Rest - 5 minutes
5. Simple free hand exercise followed by stretching exercise
6. Cooling down

‘Day 4 to 6’

1. Jogging - 5 minutes
2. Cycling - 15 minutes
3. Rest - 5 minutes
4. Stretching exercise - 5 minutes
5. Cooling down

‘Sunday Rest’
For Fifth and Sixth Week

‘Day 1 to 3’
1. Running - 20 minutes
   OR
2. Cycling - 20 minutes
3. Rest - 5 minutes
4. Skipping - 50 times
5. Rest - 4 minutes
6. Stretching exercise - 5 minutes
7. Cooling down

‘Day 4 to 6’
1. Running 20 minutes or cycling 20 minutes or fartlek training (running 3 minutes, walking 3 minutes)
2. Repeat 3 times each and no rest in between
3. Rest - 5 minutes
4. Stretching exercise - 5 minutes
5. Cooling down

NOTE: One can increase or decrease number of repetitions/duration of exercise/intensity of the exercise according to individual capability.

‘Sunday Rest’

You should follow the following steps while doing the physical exercise:

A different form of exercise makes our body beautiful, flexible and agile. As a result of exercise and training an improvement takes place if the functioning of various systems of our body.

Irregular and unsystematic exercise may do more harm than good. So while doing exercises you should follow the following rules:
1. You should perform exercises in open air.
2. For balanced development of our body, all parts should be exercised.
3. Loads of exercise should be increased gradually by increasing time, speed and intensity.
5. Never attempt any severe activity without proper practice.
6. Exercise should be done regularly with suitable interval.
7. Warming up exercise is essential before any hard work.
8. Proper rest is essential after exercise.
9. One must take proper diet after exercise.
**Following Points Should Be taken To Maintain Proper Diet.**

1. Over weight children should take limited quantity containing food like butter, cheese, meat, salamis, etc.
2. One should avoid junk food like pizza, burger, oily food, chocolates, cold drinks, noodles, etc.

**How To Avoid Fat Containing Food.**

1. Instead of butter and cheese use honey or jam.
2. Eat tandoori, grilled preparation instead of curry prepared.
3. Eat chicken, fish instead of red meat.
4. One should increase the intake of fluids during summers.
5. Prefer fresh fruits like banana, apple, grapes, mangoes, orange, water-melon, etc.
6. Increase intake of nutritional food like spouts, baked beans and dals.

**YOGA**

Practice Suryanamaskar daily, early in the morning. (3 rounds)

- Practice Vajarasana daily (after meals).
- Make a scrap book - paste your photographs performing the following asanas.

1. Paschimottanasana
2. Garurasana
3. Chakrasana
4. Ushtrasana
5. Sarvangasana