READY STEADY KNOW - GRADE 9

Chapter 1

Go the Dodo Way?

Page 8

c. nymph
 b. Gir
 c. Niger

3. c. Chalky4. b. Sumatran8. a. Atlas9. a. Chitwan

5. a. Mahanadi 10. b. dolphin

Project Work

Tiger can be classified into the following species.

• Siberian Tiger

· Bengal Tiger

South China Tiger

Javan Tiger

Sumatran Tiger

Malayan Tiger

Caspian Tiger

• Indochinese Tiger

• Bali Tiger

Tigers that have become extinct are the following.

Bali Tiger Caspian Tiger Javan Tiger

There are many similarities and differences between the species. Some of them are the following.

Bengal Tiger

It is the heaviest among all the species.

Indochinese Tiger

Mountains and hills are its natural habitat.

Malayan Tiger

They are found only in the Malay peninsula and the

tip of Thailand.

Siberian Tiger

It is the largest one among the sub species.

South China Tiger

It is the most ancient of the sub species. It is also the most critically endangered one.

Sumatran Tiger

It is the last surviving species of the Indonesian tigers. It has the darkest coat.

Bali Tiger

It is said that these tigers had spots in between their stripes.

Caspian Tiger

It is similar to the Siberian Tiger.

Javan Tiger

They were larger than the Bali Tiger.

Chapter 2

Tailor Made Genes

Page 15

1. c. Maize 6. a. 1982

2. b. Golden rice 7. b. Charles Darwin

3. b. Japan 8. b. Rapeseed

4. b. lung allergy 9. a. Bacillus

5. b. Lecithin thuringiensis

10. c. three

Project Work

There is a lot of controversy on the safety of GM foods.

Rapeseed

GM Rapeseed was developed by Monsanto, a private MNC that sells seeds. It can emerge as a weed in other crops. It has created problems in California.

Sugar beet

GM Sugar beet has been developed by Monsanto and KWS Saat. It can emerge as a weed. It can also adverse affect cross pollination

Wheat

Although Monsanto has produced GM Wheat it hasn't as yet been commercially grown. There are safety and regulation issues.

Cotton

GM Cotton or Bt Cotton as it is called has also been developed by Monsanto. It is grown in India. It is expensive. It is not effective against all the pests that attack cotton.

Chapter 3

Our Climate in Our Hands?

Page 21

- 1. b. Brazil
- 2. b. Gandhi Sarovar
- 3. a. New Orleans
- 4. b. fourth
- 5. b. Aerosols
- 6. b. seventy billion
- 7. a. Rainbow Warrior
- 8. b. Sedimentary rocks
- 9. b. Phailin
- 10. a. Whale (closest answer to a very ambiguous question with no other correct answer in the four choices offered as whales sometimes form loops around boats or skiers or e. global conveyor belt which is a more applicable answer.

Project Work

Alternative sources of energy used in India India is making rapid strides to meet its energy demands through renewable energy. There is a Ministry for New and Renewable Energy MNRE to encourage and support the use of renewable energy. Some of the alternative sources of energy used by India are the following.

- Solar Power
- Wind Power
- Waste to Energy
- Biofuels

Solar Power

- Technology behind them Solar farms, Solar Parks and Solar Power Generating Projects use photo voltaic cells and panels to generate clean and renewable solar power.
- 2. Where they are used

Most states in India, in the north, in the south, in the east and in the west, have large solar power generating plants. There is a solar grid. The energy generated by them is used to power state government buildings and private buildings. There is also off grid solar power being developed as rural electrification has not reached many areas as yet.

Solar water heaters, rural home lighting systems and lanterns and agricultural support in the form of water pumping systems are ways where solar energy is used. It can also be used to power refrigeration and air conditioning systems.

Some homes and factories also generate solar power using solar panels.

- 3. Are they easy to obtain?

 Many subsidies are available to promote the use of solar power
- 4. Are they used by private or government companies?

 Both private and government companies use solar power. Even some houses generate their own solar power and the energy produced is for personal use. Cooperative societies can undertake the building of solar power plants.

Wind Power

Technology behind them
 Wind turbines are used to generate power in
 windy areas especially along the large coastline
 of India.

2. Where they are used

Wind farms have been set up all over India. Tamil Nadu is the largest producer of wind energy

Wind power is generated and saved to the State Grids. Sometimes surplus power is generated on windy days while no power is generated on windless days.

3. Are they easy to obtain?

Wind power is generated mainly by government agencies who set up wind farms. Some large private companies are also involved in the process of generating power from the wind.

4. Are they used by private or government?

The government is mainly involved with the production and distribution of wind power. Some large companies and factories also harness the power of the wind for their activities.

Wind power is not used at the individual or cooperative society level as yet.

Waste to energy

1. Technology behind them

Both biodegradable and non biodegradable waste can be converted to energy. The technologies used as are as follows

- Thermal conversion
- Thermo-chemical conversion
- Bio-chemical conversion
- Electrochemical conversion
- 2. Where they are used

The energy obtained is used by both the private and government sector

3. Are they easy to obtain?

Yes, it is to easy generate energy

4. Are they used by private or government companies?

Waste to energy power is used mainly by the government and municipal corporations; however some private companies also generate power.

Biofuels

- 1. Technology behind them
 Generally 5 percent of biodiesel is blended
 with regular diesel and 10 percent of ethanol is
 blended with gasoline.
- 2. Where they are used Most states in India use biofuels. Ethanol is produced in larger quantities in the sugarcane growing states in the country.
- 3. Are they easy to obtain? Yes, it is easy to obtain biofuel.
- 4. Are they used by private or government companies?Both private and government companies use biofuels. They can also be used as fuels for cars

Chapter 4

Wonderfully Wondrous

Page 27

1. d. 5725

and trucks.

- 2. b. Theodore Roosevelt
- 3. b. desert
- 4. b. Woolly Mammoth
- 5. b. 14
- 6. a. Nicaragua
- 7. b. Sagarmatha
- 8. 8. There is no question or answer
- 9. b. Mawsynram
- 10. b. Isthmus

Project Work

Kilauea

It is a shield volcano situated along the southern shore of Hawaii. It is one among the five active volcanoes in the island. It has had a long and active spewing history.

When it erupts it affects the flora and fauna, though the wildlife around it has adapted to its surroundings. From the 1840's it has been a major tourist attraction. As it is one among the few volcanoes that are almost in a constant state of eruption, with moderate activity, it remains a major tourist attraction throughout the year.

Giant's Causeway

It is a World Heritage Site situated in County Antrim, on the northern coast of Northern Ireland. It has an area of 40,000 interlocking basalt columns that were formed as a result of ancient volcanic eruption. Ancient legends speak of a ancient Irish giant or superhero with supernatural abilities named Fionn Mac Cumhaill, who was supposed to have built this causeway and hence its name.

It is a popular tourist attraction from the nineteenth century. It has a lot of unique flora and fauna. Due to millions of years of erosion and weathering, some unique shapes have been carved and the impressive ones are called Organ and Giant's Boot due to their resemblance to such shapes and structures.

Iguazu

The Iguazu Falls, the largest waterfall system in the world, is situated between Argentina and Brazil. The falls are shaped such that they resemble the alphabet J. Some areas along these large falls have names like Devil's Throat, which is U shaped, Bossetti Falls and San Marin Falls.

These falls are a major tourist attraction. They can be accessed from both Argentina and Brazil.

Hagia Sophia

It was first a Greek Orthodox Basilica, which was converted to a mosque and is now a museum. It is a beautiful example of Byzantine architecture. The interior is filled with mosaic and marble pillars. The upper gallery is shaped like a horseshoe. It has several mosaic. The dome is beautiful especially as it looks as it is hovering above, as the strategically placed windows below reflect light creating beautiful images.

There are four minarets added by the Ottomans, one of which is built using red brick while the three others are made from sandstone and white limestone.

This beautiful tourist attraction in Turkey is famous

for the different types of mosaics that can seen in the same structure.

Karnak

The Karnak Temple Complex is in the village of El Karnak, near Luxor, Egypt. It consists of decayed temples, pylons, chapels and other partly restored buildings. The largest precinct in the Karnak Complex is devoted to Amun Re, who is considered to be the chief god of the Theban Triad. It also encloses one of the largest obelisks in the world.

This beautiful and ancient temple complex is a majority tourist attraction and is visited by thousands who wish to take a glimpse at ancient history. It can also be viewed virtually.

Angkor Wat

The Angkor Wat, a temple complex in Cambodia, is said to be the largest religious monument in the world and is spread over an area of 162.6 hectares.

It was built in the twelfth century by Suryavaranam II and was completed by Jayavaranam II in the Khmer (Angkor Wat) style. It was originally built as a Hindu temple, dedicated to Lord Vishnu; however, it was slowly converted to a Buddhist temple by the end of the twelfth century. It has been designed to represent Mount Meru, the abode of Hindu Gods.

It is a World Heritage Site. It is a major tourist attraction and boosts the economy of the local area, though care should be taken to maintain this historic site.

Chapter 5

Military Science

Page 33-34

1.	c.	Russia	6.	d.	Italy

Project Work

DRDO

The Defence Research and Development Organisation (DRDO) was formed in 1958. It has its headquarters in New Delhi and is under the Ministry of Defence, Government of India.

It has 52 laboratories all over the country. These laboratories undertake research in various fields related to defence. It is not only the largest organisation in the country but is also the one that conducts research in many diverse fields.

DRDO has developed many indigenous technologies as well as collaborated with foreign governments to boost the military and defence capabilities of India.

BrahMos Missiles

The BrahMos Missile is a two stage missile with a flight range of up to $290\,\mathrm{km}$. It is the first supersonic cruise missile used in India when it was deployed on 2005 on INS Rajput as the first ship.

On February 12, 1998 Dr. APJ Abdul Kalam, a former President of India and the Missile Man of India and N V Mikhailov, the former Russian Deputy Defence Minister signed an agreement in Moscow to pave the way for the formation of BrahMos Aerospace, a joint venture between India's DRDO and Russia's NPOM.

The first successful launch of BrahMos was on June 12, 2001, following which different trials were conducted. Different versions of this missile are being developed to meet the requirements of the Indian defence forces like the army, the navy and the airforce.

Chapter 6

Art - A Different Angle

Page 40

1. c. Greece

6. b. Florence

2. c. Raja Ravi Varma

7. c. Holy Chalice

3. b. Aswan

8. c. Jatayu Vadh

4. c. shadow and light 9. b. Samuel Baker

5. b. Goliath

10. b. Van Gogh

Project Work

Museum d'Orsay

The Musee d'Orsay is situated on the Left Bank, in Paris, France. The complex is a historic site and was a railway station before it was converted into a museum. Although it has an excellent collection of paintings, it also has some famous sculptures and collections of decorative arts and photography.

The museums has art from 1848 to 1914. It is famous for its paintings of the Impressionists and Post Impressionists and has the largest collection in the world of these paintings. It has impressive and famous works of the the famous artists including Monet, Van Gogh, Degas, Renoir, Manet, Gauguin, Sisley and Seurat.

It is one of the largest museums in Europe.

Salar Jung Museum

It is a beautiful museum that is located in Hyderabad, India. Most of its valuable collections were acquired by Nawab Mir Yousuf Ali Khan who was also called Salar Jung III.

It has a magnificent collection of arts and crafts from India, the Middle East, the Far East and Europe. One of the most popular exhibits is a marble statue called the Veiled Rebecca. It was acquired during the Nawab's visit to Rome, Italy in 1878. There are also many beautiful knives, miniature paintings, clocks, furniture and manuscripts.

It has been declared as a museum of national importance by the Indian Parliament.

Cairo Museum

It is also called the Museum of Egyptian Antiquities or Egyptian Museum and was first opened in 1902, though the original collections were first placed in another museum building in 1835. Situated in Cairo, Egypt, it has a humongous collection of 120,000 antique Egyptian objects, some of which are displayed and others are in the storerooms.

It has the largest collection of Pharaonic antiquities. It is a treasure house of sculptures made of stone and wood that are well preserved. Many treasures from the tomb of Tutankhamen are displayed in the museum. There are also ancient letters carved in stone.

The museum has seen its fair share of upheavals and has once again been opened to the public from July 2017.

Rijksmuseum

It is a Dutch National Museum located in Museum Square, Amsterdam. It has a huge collection of objects showcasing the arts and history of the Dutch. It was first located in the Hague in 1800, then it moved to the Royal Palace in Amsterdam in 1808 and has been in its current architectural structure from 1885.

Although it has a collection of 1 million objects, from the Middle Ages to date, 8000 objects of art and history are displayed. It has art objects from the 18th, 19th, 20th and 21st century. It has famous paintings by Dutch artists including The Night Watch by Rembrandt and The Milkmaid by Vermeer.

It also has a small Asian Gallery. It is one of the most visited museums in Europe.

British Museum

The British Museum is located in Bloomsbury, London, England. It was established in 1753, housing the private collections of Sir Hans Sloane. On January 15, 1759, its collections housed in Montague House, were opened to the public. In the centuries that followed the museum expanded and is now one of the biggest and most renowned museums in the world.

It has objects from the Stone Ages to modern times and showcases arts, sculptures, artefacts and paintings. Some of its most famous exhibits are controversial as they were taken from countries which Britain ruled over or defeated in wars. Some of them include the Elgin marbles (Greece), the Benin Bronzes (Nigeria) and the Rosetta Stone (Egypt).

Entrance to the museum is free, except for special exhibits. It is always filled with tourists and is sometimes called a museum of the world for the world.

Chapter 7

The Art Industry and Online Art

Page 46

- 1. b. Holkar
- 2. c. Chanderi (closest correct answer)
- 3. b. Lapis lazuli
- 4. c. London
- 5. c. New York, Bilbao, Venice
- 6. c. Walnut
- 7. b. France
- 8. a. Saffronart (closest correct answer)
 - d. Artflute also a correct option
- 9. d. Maharashtra
- 10. c. Raghurajpur

Project Work

Cottage Industries around the world

Iceland

- 1. Wool products including hats and gloves are made here.
- 2. Small and cosy craft shops sell musical baskets, porcelain sculptures, jewellery, glassworks and paintings.

Ghana

Scrap aluminium is converted to many household items like spoons, cooking pots and teapots using sand cast moulding techniques. This is an ancient craft that has been apart of the cottage, rural and urban economy through the years and is of social and cultural importance to Ghana. The cast aluminium pot industry of Ghana not only keeps traditions alive but also provides a livelihood.

Vietnam

Traditional craft villages, some of which have a 100 year history, are called lang nghe. They process local foods and make traditional handicrafts and household goods. Some of these include objects and furniture made from ceramics, textiles, paper and wood.

Fiji

The cottage industry in Fiji is renowned for its high quality furniture. It also produces wooden arts and crafts that are made using the waste wood that remains from logging.

Chile

Chile has a long history specific to different parts of the country which are famous for its traditional arts and crafts. Some of them are the following.

- Basketry
- Carving and woodwork
- Ceramics
- Cowboy equipment and clothing
- Knitwear and textiles
- Silverware
- Specialist crafts

Chapter 8

People Who Make Entertainment Beautiful!

Page 51

- 1. b. London
- 2. b. Charlie Bucket
- 3. b. Illinois
- 4. b. Star Wars
- 5. b. Ben Kingsley
- 6. d. Homai Vyarwalla
- 7. d. Adam and Jacob Worton
- 8. a. Glenfinnan
- 9. b. Susie Figgis
- 10. b. Kasauli

Project Work

Satyajit Ray

He was born in Calcutta on May 2, 1921. He made several movies in Bengali. His humanistic approach made his movies not only transcend language barriers but also made them appealing to wide and diverse audiences.

His movies reflected all aspects of human lives: relationships, conflicts, joys, sorrows and struggles. His first film Pather Panchali in 1955 set up a benchmark that was followed or surpassed by his other films.

He has received many international and natural awards including the Lifetime Achievement Award from the Academy Awards (Oscars), the Legion d'Honneur and the Bharat Ratna, the highest Indian award.

He passed away on April 23, 1992.

Mrinal Sen

He was born on May 14, 1923, in Faridpur, which is now part of Bangladesh.

He made his first feature film in 1953 but it was his third feature film Baishey Shravan which gained him recognition and international exposure. He began the New Cinema movement in India.

He received awards from almost all the major film festivals in the world. He also received the Dadasaheb Phalke Award from India.

K Balachander

He was born on July 9, 1930 in the Madras Presidency. He was famous for his mastery over unconventional themes and his hard hitting subject matter as he was always willing to write and direct subjects which his peers were afraid to explore.

He began his career in films as a screen writer and graduated to become a famous director. He was the one who first introduced many film personalities like Nagesh, Sujata, Kamal Haasan, Rajinikanth, Chiranjeevi, Jayaprada and many more. Although he directed mainly Tamil films, he also directed a few Telugu, Kannada and Hindi films. In the latter half of his career he produced popular TV serials.

He has won 9 National Film Awards, 13 Filmfare Awards, the Padma Sri, the Dadasaheb Phalke Award and many others. He passed away on December 23, 2014.

Alfred Hitchcock

He was born in England on August 13, 1899. He began his career as a card designer at the age of 20, moving on to become screenwriter, art director, assistant director and director.

He is called the Master of Suspense. He directed numerous British and American films which were big box office hits. His most recognised films are Psycho, Rebecca, North by Northwest and Strangers On A Train. He appeared briefly, as an actor, in most of his films

He received many awards including golden globes and BAFTA awards and has two stars on Hollywood Walk of Fame: one for his contribution to motion pictures and the other for his contribution to television. He passed away on April 29, 1980.

Steven Spielberg

He was born on December 18, 1946 in Cincinnati, Ohio. He began his career directing sci-fi and adventure movies and moved on to direct humanistic issues. He has worked for television, for films and for video games as he is an avid creator of some famous games.

Some of his popular films are Jaws, E.T. Close Encounters of the Third Kind, Raiders of the Lost Ark, The Color Purple, Schindler's List, Saving Private Ryan and Jurassic Park.

He has won three Academy Awards, AFI Lifetime Achievement Award in 1995 and many other awards.

George Lucas

He was born in Modesto, California on May14, 1944. He is best known as the creator of Star Wars and Indiana Jones.

Star Wars, in 1977, became the highest grossing film of its time and collected three Academy Awards. In 1991 he founded the George Lucas Education Foundation an NGO.

He has received many awards including the AFI Lifetime Achievement Award.

Chapter 9

Literature – A World of its Own

Page 56-57

1. b. Smriti 6. b. Merchai	nt of Venice
----------------------------	--------------

2. a. Namita Gokhale 7. d. Dete

3. d. Oxford 8. a. Alexander Dumas

4. b. Grendel 9. b. Clover

5. b. 1984 10. c. Anne of Green Gables

Project Work

Enact scenes from any of Shakespeare's plays.

Chapter 10

Sports – Another Angle

Page 62

1.	a.	American	6.	c.	VVS Laxman
2.	b.	Anant Joshi	7.	c.	steroids
3.	c.	Mawashi	8.	b.	South African
4		TA7 :	^	1.	17 1 -

4. c. Warriors 9. b. Kerala

5. c. hamstring 10. b. Chanko Nabe

Project Work

A PowerPoint presentation is made by the students.

Chapter 11

India - A Nation in the Making

Page 67–68

1.	c.	Apsara	6.	b.	1969
2.	b.	Taiwan	7.	b.	El Nino
3.	d.	22	8.	b.	Bangalore
4.	c.	Arunachal	9.	c.	Rafale
		Pradesh	10.	b.	Aadhar card

5. c. uranium and thorium

Project Work

UNESCO

The constitution of the UNESCO was signed on November 16, 1945 and came into force on November 4, 1946. It has 195 members and 8 associate members. Its headquarters are in Paris, France.

It is responsible for fostering international cooperation in the following fields.

- Education
- Science
- Culture
- Communication

Its motto is "Building peace in the minds of men and women."

UNICEF

The United Nations Children's Fund has been working from 70 years, defending children's rights in 190 countries and territories.

Some of the programmes they create for children are the following.

- Child protection and inclusion
- Child survival
- Education
- UNICEF in emergencies
- Gender
- Innovations for children
- Supply and logistics
- Research and analysis

WFP

The World Food Programme works in over 80 countries to improve food security and nutrition. Although there was earlier assistance to countries in need the WFP became a full fledged organisation of the UN in 1965. The priority of this programme is 'Zero Hunger.'

Their vision of Zero Hunger has five steps.

- Put the furthest behind first
- Pave the road from farm to market
- Reduce food waste
- Encourage a sustainable variety of crops
- Make nutrition a priority, starting with a child's first 1000 days

UNDP

United Nations Development Programme works in nearly 170 countries and territories.

The three main areas of focus are as follows.

- Sustainable development
- Democratic governance and peace building
- Climate and disaster resilience

UNFPA

The United Nations Population Fund motto is "Delivering a world where every pregnancy is wanted, every childbirth is safe and every young person's potential is fulfilled.

It supports the following.

- Reproductive health care for women and youth
- Health of pregnant women
- Reliable access to modern contraceptives
- Training of health workers to support supervised childbirths
- Prevent gender based violence
- Abandonment of female genital mutilation
- Prevention of teen pregnancies
- Efforts to end child marriages
- Delivery of safe birth supplies in areas of conflicts and disasters
- Censuses, data collection and analyses

UNEP

United Nations Environmental Programme has its headquarters in Nairobi. Kenya. It focuses on the following.

- Climate change
- Disasters and conflicts
- Ecosystem Management
- Environmental Governance
- Chemicals & Waste
- Resource Efficiency
- Environment under review

UNHCR

The United Nations High Commission for Refugees was created in 1950, after World War II. It works with governments all over the world to focus on the following.

- Advocacy
- Cash based interventions
- Education
- Environment, Disasters and Climate Change

- Livelihoods
- Public Health
- Shelter
- Asylum and Migration
- Coordinating Assistance
- Ending Statelessness
- Innovation
- Protection
- Safeguarding Individuals
- Solutions

Chapter 12

Organisations with a Purpose

Page 73-74

1. b. Palmyra

6. b. Franklin
D -Roosevelt

2. b. Bihar

3. b. Lake Chad

7. d. Switzerland

4. c. China

8. b. Vatican

5. b. Nigeria

9. c. Kofi Annan

10. c. Tuvalu

Project Work

Nuclear Reactors

A nuclear reactor is a device that controls a sustained nuclear reaction. It is used to generate electricity and to propel ships.

How does a reactor work?

Control rods are inserted or withdrawn, to varying degrees to slow down or to accelerate the reaction. In the reactor water separates the fuel tubes. This water is turned to steam by the heat produced by fission. This steam is used to drive a turbine, which spins a generator that creates electricity.

What is the material used?

A boiling water nuclear reactor uses U 235, enriched as uranium dioxide as fuel.

Are the reactions controllable/uncontrollable?

Yes

How is safety managed?

Safety is taken very seriously and is controlled through the following ways

- Control of radio activity
- Maintenance of core cooling
- Maintenance of barriers that release radiation

Nuclear disasters which have affected the world

The world's worst nuclear disasters are as follows

- 1. Fukushima, Japan March 2011
- 2. Chernobyl April 26, 1986
- 3. Three Mile Island, Pennsylvania, USA March 28, 1978
- 4. Enrico Fermi Unit 1 Michigan, USA October 5, 1966
- 5. SL -1 Idaho, USA January 3, 1961
- 6. Sodium Reactor Experiment, California, USA July 1959
- 7. Windscale, Cumbria, UK October 10, 1957

Chapter 13

Pol.itics of Different Ages

Page 79

- 1. a. Rig
- 2. c. Thanesar
- 3. c. Puducherry
- 4. d. Chandra Gupta 1
- 5. a. Gwalior (b, c, d can also be correct)
- 6. b. Italian
- 7. e. Pali (correct option unavailable in text)
- 8. b. Megasthenes
- 9. b. Hunas
- 10. b. Kosala

Project Work

1. Why was the rule of the Guptas called the Golden Period?

The rule of the Guptas in India increased the prosperity of the country. There was a lot of progress in inventions and discoveries in the following areas.

- Science
- Technology
- Engineering
- Arts
- Literature
- Astronomy
- Mathematics
- Logic
- Philosophy
- Religion

That is why it the rule of the Guptas is called the Golden Period.

2. Each union territory in India was formed because it was too small to become a state or too unique to be merged with a state or too far from the mainland of any state for example Andaman and Nicobar Islands. So they are ruled by the Union Government.

The 7 Union Territories in India are the following.

- 1. Andaman and Nicobar Islands
- 2. Chandigarh
- 3. Dadra and Nagar Haveli
- 4. Daman and Diu
- 5. Lakshadweep
- 6. Delhi
- 7. Puducherry