LITTLE ANGELS PUBLIC SCHOOL

Summer Holiday Homework

Academic Year: 2026 – 2027

Class: XII

“Let this summer be a journey of joyful learning through play, creativity, and real-life experiences. Connect with family, culture, and nature, and grow every day with confidence and curiosity”

INSTRUCTIONS TO PARENTS

- Weekly Holiday Homework will be uploaded every Sunday on the school website. (Website link will be shared in class Whatsapp Group)
- Students must complete their homework independently and on time.
- Must maintain a separate one line thin notebook for each subject. (Use A4 size paper for project work)
- Must use their own ideas and be creative in their work.
- Engage in activities such as reading books, project work, observation tasks, learning a new skill such as cooking, gardening or anything that they love to do.
- Digital tools if necessary for doing task, under the guidance of parents.
- For all activities such as suggestions / family activities / charity/ outdoor activities students may make audio or video clips as per instructions given, share it with their mentor. (WhatsApp Group)

Parents are requested to support and encourage their child to follow the daily schedule for effective learning and overall development.

INSTRUCTION TO STUDENTS

Focus: Experiential learning + responsibility + skills

- Maintain a disciplined daily schedule (early rising, hygiene, prayer).
- Allocate time for self-study and revision.
- Read books beyond textbooks (story, general knowledge).
- Participate in physical activities / sports / yoga / morning walk.
- Help in household responsibilities.
- Explore hobbies (art, music, coding basics, craft, etc.).
- Practice critical thinking through observation and questioning.
- Spend time with family and learn cultural values.
- Avoid excessive screen time; use technology for learning.

Class- XII (Holiday Homework)
1st Week

Subject- English

Deep Water (Full Chapter)	First Reading (Slow & Careful) Read the entire chapter once without stopping. Underline words you do not know. Circle every time Douglas mentions fear.	Vocabulary Log List 15 unfamiliar words. Write their meaning + one sentence of your own. Words to start with: misadventure, subdued, flailed, bob, treacherous, resilient	What is the difference between fear and phobia? Did Douglas have a fear or a phobia?	Read slowly. Picture each scene as a film in your mind.
Deep Water (Re-read: YMCA pool incident)	Second Reading — Focus on the YMCA Pool Incident Re-read only the YMCA pool section. Note: How does Douglas describe the moment he nearly drowned? Mark all feelings he expresses.	Character Sketch (150 words) Write a character sketch of Douglas as a child. Include: age, personality, nature, reaction to crisis	Why do you think Douglas kept his fear of water a secret for so long?	Focus on the language — notice how Douglas uses short sentences to build panic.
Deep Water (Re-read: Learning to swim)	Third Reading — The Recovery Re-read the sections where he learns to swim with the instructor. Note: What specific techniques does the instructor use? What role does willpower play?	Timeline of Events (Visual) Draw a simple timeline showing: 1. Fear begins 2. YMCA incident 3. Returns to water 4. Learns to swim 5. Final triumph Add 1 quote from the text for each stage.	Can a fear that begins in childhood stay with you forever? Have you experienced this?	Your timeline can be in a notebook — make it visual and neat.
Deep Water (Themes & Devices)	Literary Study Identify and write examples of: a) Flashback b) First-person narrative c) Simile d) Short sentences for effect Find 2 examples of each from the text.	Theme Analysis (150 words) Write on the theme: 'Courage is not the absence of fear — it is the conquest of fear.' Use at least 3 examples from the chapter to support your answer.	Roosevelt said, 'All we have to fear is fear itself.' How does Douglas's experience prove or disprove this?	Quote Roosevelt accurately in your write-up — it appears in the chapter.
Deep Water (Board Question Practice)	CBSE-Style Reading Re-read any one paragraph of your choice. Prepare answers to: a) 2 Short Answer Questions (30-40 words) b) 1 Long Answer Question (120-150 words)	Write the answers neatly in your notebook. Q1 (Short): How did the instructor teach Douglas to swim? Q2 (Short): What does the phrase 'a watery grave' tell us about Douglas's mental state? Q3 (Long): How did Douglas finally overcome his fear? What qualities helped him?	What does this chapter teach us about the human mind's power over the body?	Practice writing within the word limit — CBSE values concise answers.

Deep Water — Creative Culmination	Final Review & Recollection Close the chapter. From memory, write: 5 key events of the story 3 quotes you remember 1 central message of the chapter	Creative Task (Choose ANY ONE): Option A — Diary Entry: Write Douglas's diary entry on the day he finally swam the length of the pool alone (150 words). Option B — Letter: Douglas writes to the young boy at the YMCA pool warning him about water safety (150 words). Option C — Poem: Write an 8–10 line poem titled 'Fear' from Douglas's perspective.	If you could meet Douglas today, what one question would you ask him about his experience?	This is Week 1's creative submission. Write neatly — it will be checked.

Subject- Physics

1. A concave mirror forms a real image of an object kept at a distance 9 cm from it. If the object is taken away from the mirror by 6 cm, the image size reduces to 1/4th of its previous size. Find the focal length of the mirror.
2. When an object is placed at a distance of 60 cm from a convex spherical mirror, the magnification produced is 1/2. Where should the object be placed to get a magnification of 1/3 ?
3. 8. An object of 1 cm^2 face area is placed at a distance of 1.5 m from a screen. How far from the object should a concave mirror be placed so that it forms 4 cm^2 image of object on the screen? Also, calculate the focal length of the mirror.
4. What is meant by refraction of light ?
5. State and explain the laws of refraction of light ?
6. Show that a convex mirror always produces a virtual image, independent of the location of the object ?
7. With the help of a ray diagram explain the phenomenon of total internal reflection. Obtain the relation between critical angle and the refractive index of the medium.
8. Draw ray diagram to show how a right angled isosceles prism can be used to (i) deviate the ray through 180^o, (ii) deviate the ray through 90^o. And (iii) invert the ray.
9. Draw the ray diagram to show use of total internal reflection in (i)optical fibre, and (ii) a prism that bends the ray by 90^o.
10. Show that the $1/r^2$ dependence of electric field of a point charge is consistent with the concept of the electric field lines.
11. Define the term electric flux. How it is related to electric field intensity ? What is its SI unit?
12. A uniform electric field E = $Ex\hat{i}$N/C for x > 0 and $E = -Ex\,\hat{i}$ N/C for x < 0 are given. A right circular cylinder of length 1 cm and radius r cm has its centre at the origin and its axis along the x-axis. Find out the net outward flux. Using Gauss's law write the expression for the net charge within the cylinder.
13. An infinitely long positively charged wire has a linear charge density n C/m. an electron is revolving around the wire as its centre with constant velocity in a circular plane perpendicular to the wire. Deduce the expression for its kinetic energy.
14. What is the advantage of introducing the concept of electric field ?
15. An electron and a proton are kept in the same electric field. Will they experience same force and have same acceleration ?

16. Why is it necessary that the field lines from a point charge placed in the vicinity of a conductor must be normal to the conductor at every point.
17. Distinguish between electric charge and mass.
18. Compare electrostatic and gravitational interactions.
19. A thin metallic spherical shell of radius R carries a charge Q on its surface. A point charge Q/2 is placed at its centre C and another charge +2Q is placed outside the shell at a distance *x* from the centre as shown in the figure.
20. Write some limitations of Coulomb's law.
21. Describe how electric field lines get its name ? write 4 property of field lines and describe each of them.
22. Give applications of TIR. Explain how the mirage forms in hot areas.
23. Give the construction of optical fibre cable with proper diagram.
24. Relate linear magnification with areal magnification.
25. What is parallax error In optical bench experiments ? how to overcome it ?

Subject- Chemistry

1. KH value for Ar(g), CO_2(g), HCHO(g) and CH_4(g) are given. Arrange them in increasing order of solubility.
2. Galvanised iron sheets are coated with:
   a) Carbon b) Copper c) Zinc d) Nickel
3. Aryl halides are less reactive toward nucleophilic substitution because of:
   a) stable carbocation b) resonance c) longer bond d) sp^3 carbon
4. Which is not a good conductor?
   a) Cu b) NaCl(aq) c) NaCl(molten) d) NaCl(s)
5. In haloarene compounds, halogen combines with carbon having:
   a) sp^2 hybridization b) sp^3 hybridization
   c) sp hybridization d) dsp^2 hybridisation
6. When a non-volatile solid is added to water, it will:
   a) boil above 100°C and freeze below 0°C b) boil below 100°C and freeze above 0°C
   c) boil below 100°C and freeze below 0°C d) boil above 100°C and freeze above 0°C
7. Rust is a mixture of:
   a) FeO and $Fe(OH)_3$ b) Fe_2O_3 and $Fe(OH)_3$
   c) Fe_3O_4 and $Fe(OH)_3$ d) FeO and $Fe(OH)_2$
8. A mono haloarene is an example of:
   a) aliphatic compound b) alkyl halide
   c) aromatic halogen compound d) side-chain halide
9. Toluene reacts with halogen in presence of $FeCl_3$ by:
   a) electrophilic substitution b) nucleophilic substitution
   c) elimination d) addition
10. Carbon attached to halogen in haloalkanes carries:
    a) positive charge b) negative charge c) neutral charge d) ionic charge
11. Reaction of C_6H_5Br with aqueous NaOH follows:
    a) SN1 b) SN2 c) Saytzeff rule d) Depends on temperature

12. Colligative properties depend upon:
    a) nature of solvent only b) concentration of solute particles
    c) identity of solute only d) none
13. As carbocation stability increases, SN1 reaction rate:
    a) increases b) decreases c) remains same d) unpredictable
14. Ionic mobility of Ag^+ ion is:
    a) 5.2×10^{-9} b) 2.4×10^{-9} c) 1.52×10^{-9} d) 8.25×10^{-9}
15. Chlorobenzene reacts with alkyl chloride in the presence of sodium metal gives:
    a) toluene b) xylene c) benzyl chloride d) phenol
16. Three juice samples contain glucose concentrations 0.1 M, 0.5 M and 0.2 M. Highest freezing point will be for:
    a) 0.1 M b) 0.5 M c) 0.2 M d) all same
17. Volume of H_2 gas at NTP obtained by passing 4 A current for 30 minutes through acidified water is:
    a) 0.0836 L b) 0.0432 L c) 0.1672 L d) 0.836 L
18. On which factor does carbocation stability depend?
    a) Resonance b) Temperature c) Transition state d) Reaction rate
19. In haloalkanes, carbon in C–X bond possesses:
    a) positive charge b) negative charge c) no charge d) ionic charge
20. Arrange decreasing SN2 reactivity:
    a) $RCH_2X > R_2CHX > R_3CX$ b) $R_3CX > R_2CHX > RCH_2X$
    c) $R_2CHX > R_3CX > RCH_2X$ d) $RCH_2X > R_3CX > R_2CHX$
21. Which compound is most reactive towards nucleophilic substitution?
    a) C_6H_5Cl b) $CH_2=CHCl$ c) $ClCH_2CH=CH_2$ d) $CH_3CH=CHCl$
22. Isopropyl chloride undergoes hydrolysis by:
    a) SN1 b) SN2 c) SN1 and SN2 d) neither
23. The most reactive nucleophile is:
    a) CH_3O^- b) $C_6H_5O^-$ c) $(CH_3)_2CHO^-$ d) $(CH_3)_3CO^-$
24. Tertiary alkyl halides are inert to SN2 because of:
    a) instability b) steric hindrance c) insolubility d) inductive effect
25. Why are aquatic species more comfortable in cold water?
26. What is corrosion?
27. Explain why chlorine is ortho-para directing although it is electron withdrawing.
28. Why is cyclohexyl chloride more reactive than chlorobenzene?
29. Explain why haloarenes are less reactive than haloalkanes towards nucleophilic substitution reactions.
30. Write short notes on SN1 and SN2 reactions
31. What is normal hydrogen electrode? Why is it important?
32. Why does $C_6H_5CH_2Cl$ react faster in SN1 reaction?
33. Why does preparation of aryl iodides require an oxidising agent?
34. What is cell constant? How is it determined
35. How many coulombs are required for oxidation of 1 mole of water to oxygen?
36. Electricity required to deposit 1 mole of aluminium from $AlCl_3$ solution.
37. Describe oxidation potential and reduction potential.

38. Why does electrolysis of KBr produce bromine while KF does not produce fluorine?
39. Why does nitro group increase reactivity of haloarenes towards nucleophilic substitution?
40. Cyanide ion acts as an ambident nucleophile. Explain.
41. State Faraday's laws of electrolysis.
42. Explain polarity of carbon-halogen bond in haloarenes and haloalkanes.
43. What is electrolytic conductance? Mention factors affecting it.
44. Why does conductivity decrease with dilution?
45. Why does galvanised iron not rust easily whereas tin-coated iron rusts faster?
46. Allyl chloride is hydrolysed more readily than n-propyl chloride. Why?
47. Calculate the volume of hydrogen gas produced at NTP by passing 4 A current for 30 minutes through acidified water.
48. A current of 2.0 A passed for 5 hours deposits 22.2 g metal (atomic mass 177). Find oxidation state.
49. Assertion: Haloarenes are less reactive than haloalkanes.
    Reason: C–X bond in haloarenes has partial double bond character.
50. Assertion: p-Nitrophenol is more acidic than phenol.
51. Assertion: Chlorobenzene does not undergo nucleophilic substitution easily.
52. Assertion: Nitro group at ortho and para positions increases reactivity of haloarenes.
53. Compare primary and secondary batteries.
54. Why does corrosion of motor cars increase in winter when salt is spread on roads?
55. Which compound reacts faster in SN1 reaction with OH^- ion:
    CH_3CH_2Cl or $C_6H_5CH_2Cl$?
56. Why is C–Cl bond in chlorobenzene shorter than in CH_3Cl?
57. Out of o-dibromobenzene and p-dibromobenzene, which has higher melting point and why?
58. Differentiate between chlorobenzene and benzy.
59. Write reactions occurring in lead storage battery during charging and discharging.
60. State Kohlrausch's law . The Λ_m^o for sodium acetate, HCl, and NaCl are 91.0, 425.9 and 126.4 S cm^2 $mol^{-1,}$ respectively, at 298 K. Calculate Λ_m^o for CH_3COOH.calculate molar conductivity of NH_4OH.

Electrolysis of NaCl Solution

61. Answer the following:

a) Total moles of chlorine gas evolved
b) Weight of amalgam formed
c) Number of moles of electrons involved
d) Gas liberated at cathode

61. Write short notes on azeotrope
62. Although chlorine is electron withdrawing, it is ortho-para directing in electrophilic substitution. Explain.
63. Complete the following reactions:
    (a) Chlorobenzene → Biphenyl (b) Chlorobenzene → Toluene
    (c) Chlorobenzene → 1,2-Dichlorobenzene (d) Chlorobenzene → 1-Chloro-2-Nitrobenzene
64. Complete the reaction sequence: Identify A,B,C
    $C_6H_5Br \rightarrow Mg/dry\ ether \rightarrow A + CO_2/H_3O^+ \rightarrow B + PCl_5 \rightarrow C$
65. If a 5A current is passed through a solution for 60 minutes, what amount of Cu will be deposited at the electrode?

66. What are Reverse osmosis and wite its application
67. State Raoults law,why solutions are deviated from Raoults law
68. Write the uses of chloroform, Iodoform,Freon,DDT
69. What are hypertoni.Hypotonic and Isotonic solution.

Subject- Biology

Activity-01

Objective: To observe the "pollen-pistil interaction" in real-time.

- **Task:** Induce pollen tube growth using a sugar solution.
- **Action:**
    1. Create a **10% sugar solution** (1 part sugar, 9 parts water).
    2. Place a drop of this solution on a glass slide.
    3. Dust fresh pollen (from *Vinca* or *Lily*) into the drop.
    4. Wait for 15–30 minutes.
- **Observation:** Look for the emergence of tiny **Pollen Tubes**. If you don't have a microscope, describe the biochemical necessity of sugar and boron for this process in your report.

Subject- Maths

1. Let A= $\{1, 2,\ 3,\}$ B= $\{2,4,6\}$ define a relation from A to B by R= $\{(x, y\}|\ y = zx$ write the domain and Ranze.
2. Check the relation R= $\{(1,2), (2,4), (3,6), (4,8)\}$ fromA= $\{1,2,3,4\}$ to B= $\{, 2,4,6,8\}$ is a function.
3. Determine whether the function $f(x) = 3x + 5$ is one-one and into.
4. State the reason for the relation R in the set $\{1,2,3\}$ given by R= $\{(1,2), (2,1)\}$ is not to be transitive.
5. Determine $f(x) = 4x + 7$, f: A→B is one-one & not if $x \in R$.
6. Let A= $\{1,2,3\}$, show that the relation R in A given by R= R= $\{(1,1), (2,2), (3,3)\}$ is equivalence.
7. Let $f(x) = \left(\frac{x-2}{x-3}\right)\ f: A \to B$. Is f is one-one.
8. Show that the function $f: R \to R$ designed by $f(x) = \frac{2x-1}{3},\ \ x \in R$
9. If $f(x) = 3x^2 + 5$, for all $x \in R$ is bijective.
10. Prove that $f(x) = x^3 + 1$ is one-one | into.
11. Find the principle value of $\tan^{-1}$ (-v3)
12. Find the principle value $\sin^{-1}\ \frac{-\sqrt{3}}{2}$
13. Find $tan^{-1}\sqrt{3} - sec^{-1}(-2)$
14. Find the principal value of $tan^{-1}\left(-\sqrt{3}\right) +\ tan^{-1}1$
15. Find the value of $tan^{-1}\left(tan^{\frac{3\pi}{4}}\right)$
16. Find $sin^{-1}\ \left[\cos\left(sm^{-1}\frac{\sqrt{3}}{2}\right)\right]$
17. Find the value of $cos^{-1}\left(\cos\frac{13\pi}{6}\right)$
18. Find the value of $\sin\left[\frac{\pi}{3} - sin^{-1}\left(-\frac{1}{2}\right)\right]$

19. Find the principal value of $tan^{-1}1 + sin^{-1}\left(-\frac{1}{2}\right)$
20. Find the value of $sin^{-1}(\sin\left(\frac{2\pi}{3}\right)$
21. $\begin{bmatrix} x-y & 2y \\ 2y+z & x+y \end{bmatrix} = \begin{bmatrix} 1 & 4 \\ 9 & 5 \end{bmatrix}$, then find $x + y + z$.
22. Find a marix X such that $2A + B + X = 0$ where $A = \begin{bmatrix} -1 & 2 \\ 3 & 4 \end{bmatrix}, B = \begin{bmatrix} 3 & -2 \\ 1 & 5 \end{bmatrix}$
23. $2\begin{bmatrix} 1 & 3 \\ 0 & x \end{bmatrix} + \begin{bmatrix} y & 0 \\ 1 & 2 \end{bmatrix} = \begin{bmatrix} 5 & 6 \\ 1 & 8 \end{bmatrix}$, find $(x + y)$
24. If $Y = \begin{bmatrix} 3 & 2 \\ 1 & 4 \end{bmatrix}$ and $2X + Y = \begin{bmatrix} 1 & 0 \\ -3 & 2 \end{bmatrix}$, find X.
25. If a matrix has 7 elements, then find the possible order it can have.
26. Construct a (2×2) matrix $A = [a_{ij}]$ whose element is given by $[a_{ij}] = i + 2j$.
27. Solve for x if $[x \quad 1]\begin{bmatrix} 1 & 0 \\ -2 & 0 \end{bmatrix} = 0$.
28. $\begin{bmatrix} 7 & 1 & 2 \\ 9 & 2 & 1 \end{bmatrix}\begin{bmatrix} 3 \\ 4 \\ 5 \end{bmatrix} + 2p\begin{bmatrix} 4 \\ 2 \end{bmatrix} =$ _____.
29. If $A = \begin{bmatrix} 1 & -3 \\ 2 & K \end{bmatrix}$ and $A^2 - 4A + 10I = A$, then find *'K'*.
30. Find x if $\begin{bmatrix} 5 & 3x \\ 2y & x \end{bmatrix} = \begin{bmatrix} 15 & 4 \\ 12 & 6 \end{bmatrix}^T$

Subject- Physical Education

1. Define sports event management.
2. What is the importance of planning in sports events?
3. Explain the responsibilities of different committees in sports event management.
4. Describe the procedure for organizing a sports event in school.
5. Your school is organizing an annual sports meet. Prepare a list of committees required for the event and explain their functions
6. Name any four committees formed during sports events.
7. What are fixtures?
8. Describe the procedure for organizing a sports event in school.
9. Compare knock-out tournaments and league tournaments in detail.
10. Prepare a simple budget for organizing an inter-house volleyball tournament.
11. What is the role of the publicity committee?
12. What is the function of the medical committee?
13. Explain the role of technology in modern sports management.
14. Discuss the qualities required for a successful sports manager.
15. Suppose heavy rain interrupts a football tournament. As an event manager, what steps will you take to manage the situation?
16. Differentiate between knock-out and league tournaments.
17. What are the duties of volunteers in sports events?
18. Design a fixture for 8 teams in a knock-out tournament.
19. Write a short report on a sports event conducted in your school or locality.

20. Why is budgeting important in sports management?
21. What do you mean by organising? Write any two functions of Organising.
22. Define Staffing. Write any two functions of staffing.
23. What is Directing? Write any two functions of Directing.
24. Discuss the various types of tournaments.
25. Discuss the method of fixing byes in knock-out tournament.

Choose the correct option.

1. Which committee manages money and expenses?
   a) Transport Committee b) Finance Committee
   c) Medical Committee d) Boarding Committee
2. In which tournament does a team get eliminated after one defeat?
   a) League Tournament b) Knock-out Tournament
   c) Combination Tournament d) Round Robin Tournament

3- Which committee is responsible for first aid?
   a) Refreshment Committee b) Ground Committee
   c) Medical Committee d) Publicity Committee

4. Fixtures are used for:
   a) Decoration b) Scheduling matches
   c) Prize distribution d) Ticket checking
5. Which quality is most important for a sports manager?
   a) Laziness b) Leadership c) Carelessness d) Fearfulness