

NIOS — Class 12th

Tutor Marked Assignment (TMA)

Home Science (216)

Session: 2025-2026 | Maximum Marks: 20

Gyantech Guru ji | 9518616764 | [youtube.com/@GyanTechGuruJi](https://www.youtube.com/@GyanTechGuruJi)

Question 1 (Any One) — 2 Marks

Q.1(A): You notice a small gas leak smell while cooking. What actions would you take to prevent fire accident, and how would you ensure family safety? (Lesson-13)

Answer:

If a gas leak smell is noticed while cooking, the following steps should be taken immediately:

1. Turn off the gas cylinder regulator/knob immediately and do not operate any electrical switches, lighters, or matchsticks, as a spark could trigger a fire or explosion.
2. Open all doors and windows immediately to allow proper ventilation, helping the gas to disperse from the room quickly, and evacuate family members to a safe area until the smell completely clears.

Additionally, calling the gas supplier's emergency helpline and getting the cylinder/regulator checked by a professional ensures the leak is properly fixed before resuming cooking.

Question 2 (Any One) — 2 Marks

Q.2(B): Your friend often feels tired and complains of weakness. Based on balanced diet, suggest two changes in their daily food intake to improve energy levels. (Lesson-7)

Answer:

Tiredness and weakness are often caused by an imbalanced diet lacking essential nutrients. The following two changes can help improve energy levels:

3. **Increase Iron-Rich Foods:** Include foods like green leafy vegetables (spinach, fenugreek), jaggery, dates, and pulses in daily meals. Iron deficiency is a common cause of fatigue, and increasing iron intake helps in better oxygen transport in the body, boosting energy.
4. **Add Complex Carbohydrates and Proteins:** Replace refined foods with whole grains (whole wheat, oats, brown rice) and include adequate protein sources like milk, eggs, dal, and nuts in each meal. This provides sustained energy release throughout the day rather than quick spikes and crashes caused by sugary or processed foods.

These dietary changes, along with regular meal timings and adequate hydration, can significantly improve energy levels and reduce feelings of weakness.

Question 3 (Any One) — 2 Marks

Q.3(B): Sanjana enjoys scribbling with crayons and climbing stairs. Explain how these activities relate to gross and fine motor development. (Lesson-18)

Answer:

Motor development in children is divided into two types: Gross Motor Development (large muscle movements) and Fine Motor Development (small muscle movements).

Climbing Stairs — Gross Motor Development:

Climbing stairs involves the use of large muscles of the legs, arms, and torso, requiring balance, coordination, and strength. This is an example of Gross Motor Development, as it involves movement of the whole body and large muscle groups.

Scribbling with Crayons — Fine Motor Development:

Scribbling with crayons involves the use of small muscles of the fingers and hands, requiring hand-eye coordination and precise control. This represents Fine Motor Development, as it involves small, precise movements of the hands and fingers.

Both these activities are essential and complementary milestones in early childhood, indicating healthy physical and neurological development of the child.

Question 4 (Any One) — 4 Marks

Q.4(B): Your friend struggles to complete homework on time and forgets important tasks. Using the management process, explain how you would guide her to plan, organise, implement, and evaluate her daily activities. (Lesson-14)

Answer:

The Management Process consists of four key steps: Planning, Organising, Implementing, and Evaluating. Applying these steps can help my friend improve her time management skills significantly.

1. Planning:

I would help her create a daily/weekly schedule, listing all tasks (homework, study, leisure, sleep) with specific time slots allocated to each. Prioritizing important and urgent tasks (like upcoming exam preparation or assignment deadlines) at the top of the list would help her focus on what matters most.

2. Organising:

I would guide her to organize her study materials, books, and stationery in a fixed, clutter-free study space, reducing time wasted searching for items. Arranging tasks in order of priority (using a to-do list or planner) ensures she tackles the most important homework first.

3. Implementing:

I would encourage her to follow the planned schedule consistently, setting reminders or alarms for each task to stay on track. Breaking large tasks into smaller, manageable parts (e.g., completing one subject's homework at a time) makes implementation less overwhelming and more achievable.

4. Evaluating:

At the end of each day or week, I would help her review what tasks were completed and which were missed, identifying reasons for any delays. Based on this evaluation, the schedule can be adjusted — for example, allocating more time to subjects she finds difficult or moving distractions to a separate time slot.

By consistently following this four-step management process — Plan, Organise, Implement, Evaluate — my friend can develop better time management habits, complete her homework on time, and reduce the chances of forgetting important tasks.

Question 5 (Any One) — 4 Marks

Q.5(A): As a shopkeeper, explain the differences between wool, synthetic, and cotton fabrics based on their properties and end uses, to help a customer choose winter clothing. (Lesson-10)

Answer:

As a shopkeeper helping a customer select fabric for winter clothing, I would explain the key differences between Wool, Synthetic, and Cotton fabrics as follows:

1. Wool:

- **Properties:** Wool is a natural protein fiber obtained from sheep. It is an excellent insulator, retaining body heat even when slightly damp, and has good elasticity and crease resistance.
- **End Uses:** Ideal for winter clothing like sweaters, shawls, coats, and blankets, as it provides excellent warmth in cold weather.

2. Synthetic Fabrics (e.g., Polyester, Nylon, Acrylic):

- **Properties:** Synthetic fibers are man-made from chemical processes. They are durable, lightweight, wrinkle-resistant, and quick-drying, but generally less breathable than natural fibers.
- **End Uses:** Commonly used for jackets, fleece wear, and blended winter garments, often combined with wool for added durability and affordability.

3. Cotton:

- **Properties:** Cotton is a natural plant-based fiber, soft, breathable, and absorbent, but it does not provide much insulation against cold and tends to retain moisture, making it less suitable as a sole layer in winter.
- **End Uses:** Best used as an inner layer (like thermal innerwear or cotton shirts worn under warmer outerwear) rather than as the primary outer winter garment.

Recommendation to the Customer:

For maximum warmth in winter, I would recommend wool garments (sweaters, coats) as the outer layer for their excellent insulation properties, cotton as the inner/base layer for comfort and breathability, and synthetic blends for affordable, durable, and easy-care winter wear options like jackets and fleece.

Question 6 (Any One) — 6 Marks [Project]

Q.6(B): Designing a Child-Safe Home — Create a plan to design a child-friendly and accident-free home environment, highlighting changes in kitchen, bathroom, and play area. (Lesson-13)

Answer:

Introduction:

A child-safe home is essential for preventing accidents and ensuring the overall well-being of young children. Children, due to their natural curiosity and limited understanding of danger, are particularly

vulnerable to household hazards. This project outlines a comprehensive plan to design a child-friendly and accident-free home, focusing on key areas such as the kitchen, bathroom, and play area.

1. Kitchen Safety Modifications:

5. Store all sharp objects (knives, scissors) and hazardous chemicals/cleaning agents in high cabinets or locked drawers, completely out of children's reach.
6. Keep gas stove knobs covered with childproof covers or place stove controls out of reach, and always turn pot/pan handles inward (away from the edge of the stove) to prevent children from pulling them down.
7. Use non-slip mats on kitchen floors and ensure electrical appliances (mixers, toasters) are unplugged and stored away when not in use, with cords kept out of reach to avoid choking or pulling hazards.
8. Install safety gates at kitchen entrances to prevent young children from entering unsupervised while cooking is in progress.

2. Bathroom Safety Modifications:

9. Install non-slip mats or textured flooring in the bathroom and bathtub area to prevent slipping accidents, which are one of the most common household injuries for children.
10. Store all medicines, cleaning supplies, and toiletries (like razors, soaps with harsh chemicals) in locked cabinets, completely inaccessible to young children.
11. Adjust water heater temperature to a safe level (below 50°C) to prevent accidental scalding, and ensure electrical outlets near the bathroom are covered with childproof plugs or are GFCI (Ground Fault Circuit Interrupter) protected.
12. Never leave young children unattended in the bathtub or near any water source, even briefly, as drowning can occur in minimal water within seconds.

3. Play Area Safety Modifications:

13. Ensure the play area is free from sharp-edged furniture; use corner guards/cushions on tables and furniture edges to prevent injury from falls.
14. Use soft flooring materials like foam mats or carpets in play areas to cushion falls, and ensure toys are age-appropriate, free from small detachable parts that could cause choking hazards.
15. Cover all electrical outlets in the play area with childproof safety covers, and keep electrical cords and wires bundled and out of reach to prevent tripping or electrical shock.
16. Ensure windows in or near the play area have safety locks or grills to prevent falls from height, and keep heavy or unstable furniture (like bookshelves) secured to the wall to prevent tipping over.

4. General Home Safety Measures:

- Install smoke detectors and keep a fire extinguisher accessible in case of emergencies.
- Use safety gates at staircases to prevent falls, and ensure balcony railings are high enough and have no large gaps that children could fall through.
- Keep emergency contact numbers (doctor, ambulance, poison control) visibly displayed near the telephone or refrigerator for quick access during emergencies.

Conclusion:

Creating a child-safe home requires a proactive and comprehensive approach across all areas of the house, particularly the kitchen, bathroom, and play areas, which pose the highest risk of accidents. By implementing these safety modifications — including childproof locks, non-slip surfaces, secured furniture, and constant supervision — parents and caregivers can significantly reduce the risk of household accidents, allowing children to grow and explore in a safe, nurturing environment. Regular safety audits of the home as the child grows and becomes more mobile are also recommended to address new and evolving risks.

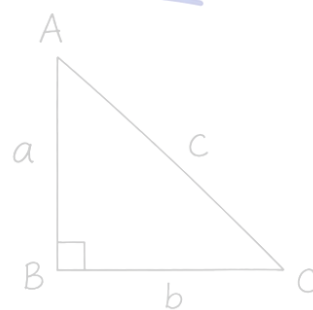
— End of TMA Solution (Home Science 216) —

Gyantech Guru ji | 9518616764 | <https://www.youtube.com/@GyanTechGuruJi>

GyanTech Guru ji

If $x^2 + y^2 = 25$
and $xy = 12$
then $(x + y)^2 = ?$

$$\begin{aligned}(x + y)^2 &= x^2 + y^2 + 2xy \\ &= 25 + 2(12) \\ &= 25 + 24 \\ &= 49\end{aligned}$$



$$a^2 + b^2 = c^2$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

 **GyanTech Guru ji**
9518616764