

1. Games

Games are played for fun, enjoyment, learning and entertainment.

Types of Games

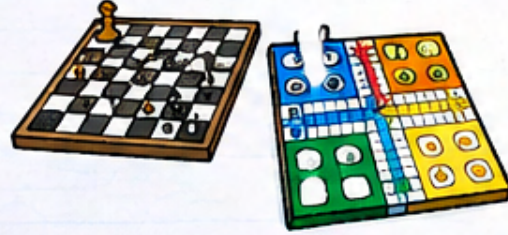
Outdoor Games

- Cricket
- Blind Man's Buff



Indoor Games

- Chess
- Ludo
- Card Games



Play
Learn
Be Healthy
Be Happy

Screen Time

Excessive screen time is not good for mental and physical health. We should also play outdoor games and take part in physical activities. Screen time should be limited as advised by teachers and family.



Avoid
Excessive
Screen Time



3. Game Design

Game design means planning a game before making or playing it.

Things to Think About

- 1 Name of the game
- 2 Number of players
- 3 Rules
- 4 Actions performed by players
- 5 How the game will be played
- 6 Interesting features of the game

Example Game Design



Name : Collect the Stars

Players : 1 player

Rules : Move the character and collect stars

Actions : Move, jump, collect

Goal : Collect 10 stars

Special Feature : Increasing levels and sounds

Important Points

- ★ A game should have clear rules.
- ★ It should have interesting and enjoyable activities.
- ★ The design should be simple and easy to understand.

Good Game Design
makes the game
Fun and Interesting!



2. Internet Safety

While using the Internet, we should follow safety precautions.

Be Safe
Be Smart
Use Internet
Carefully



Key Points

- ★ Use the Internet carefully.
- ★ Follow the instructions given by teachers and family.
- ★ Know what to do and what not to do while using the Internet.
- ★ Avoid excessive screen time.

Do's

- ✓ Use trusted websites.
- ✓ Keep personal information private.
- ✓ Ask a teacher or parent if unsure.
- ✓ Be polite and respectful online.

Don'ts

- ✗ Do not share personal details (name, address, phone number).
- ✗ Do not talk to strangers.
- ✗ Do not click on unknown links.
- ✗ Do not spend too much time online.

Remember

- ★ The Internet is a useful tool for learning, research and fun.
- ★ Use it safely and responsibly.
- ★ Excessive use can affect our health, study and daily activities.

Use Internet
for Learning,
Not for Harm!



4. Model of a Game

A model represents the different parts of a game. It helps us to visualise and understand the details of a game.

Examples of Models

Ludo / Snakes and Ladders



- ★ Cardboard and buttons can be used.
- ★ We can make a simple board at home or in class.

Cricket



- ★ A model of a cricket pitch can be made.
- ★ Stumps, bat, ball and players can be shown.

Blind Man's Buff



- ★ A field or playground with boundaries can be shown.
- ★ Players can be represented using paper cutouts or toys.

Key Points

- ★ A model shows the different parts of the game.
- ★ It helps in planning and understanding the game.
- ★ We can use simple materials like cardboard, paper, buttons, drawings or toys.

Remember

A model helps us to visualise and understand the details of a game.

5. Online Games

Online games can be played on:

- Smartphone
- Computer
- Laptop



While trying an online game, we can observe:

- Rules (how to play)
- Characters (players, enemies etc.)
- Interaction (how we control or play)
- Colours and background
- Music and sound
- Interesting or challenging parts
- Ways to improve the game



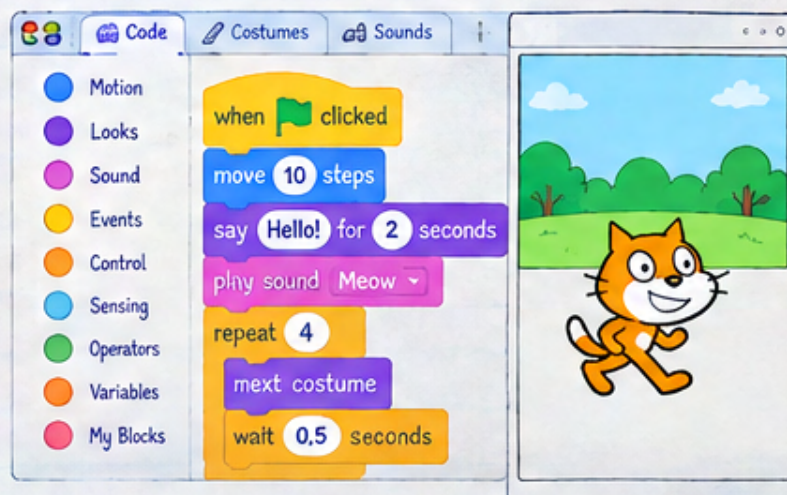
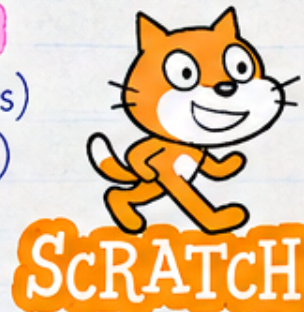
We can learn new ideas for our own game by playing online games.

6. Scratch

Scratch is a **visual programming language** used to create **animations and games**.

Scratch can be used to:

- Create characters (sprites)
- Create scenes (backdrops)
- Animate characters
- Add dialogue and text
- Add music and sound
- Create interactive games



7. Scratch Account and Tutorials

To use Scratch, we can:

- Visit the Scratch website.
- Log in/create an account.
- Use an email address of a teacher or family member if required.
- Click "Create" to start making a project.



Scratch Website

<https://scratch.mit.edu>

Scratch Tutorials

Scratch tutorials can help beginners learn how to create games and animations.

Examples of tutorial searches:

- ☒ Scratch game tutorials for beginners
- ☒ How to make a maze game on Scratch
- ☒ Interactive storytelling on Scratch
- ☒ Creating multiplayer games on Scratch



We can also watch videos on YouTube to learn Scratch.

8. Sprite

A **Sprite** is a **character or object** used in a Scratch project.

A Sprite can be:

- Selected from the in-built Scratch library.
- Imported from an image.
- Created by drawing.
- Created using a photograph or other suitable image.

Examples of Sprites



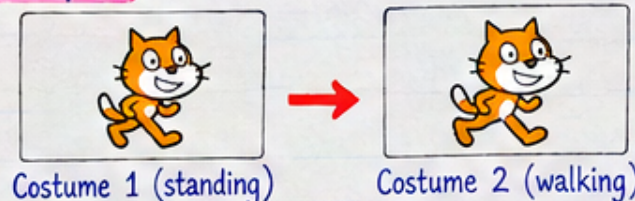
A Sprite can have different costumes.



9. Costume

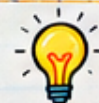
A **Costume** is the **appearance** of a Sprite. Changing costumes can make a Sprite appear differently during an animation or game.

Example:



Uses:

- To show movement in animation.
- To change the look of a character.
- To show different actions (e.g., walk, jump, fly).



10. Backdrop

A **Backdrop** is the **background** of a Scratch project.

A suitable backdrop can be:

- Selected from Scratch.
- Created by the user.
- Imported as an image.

Examples of Backdrops

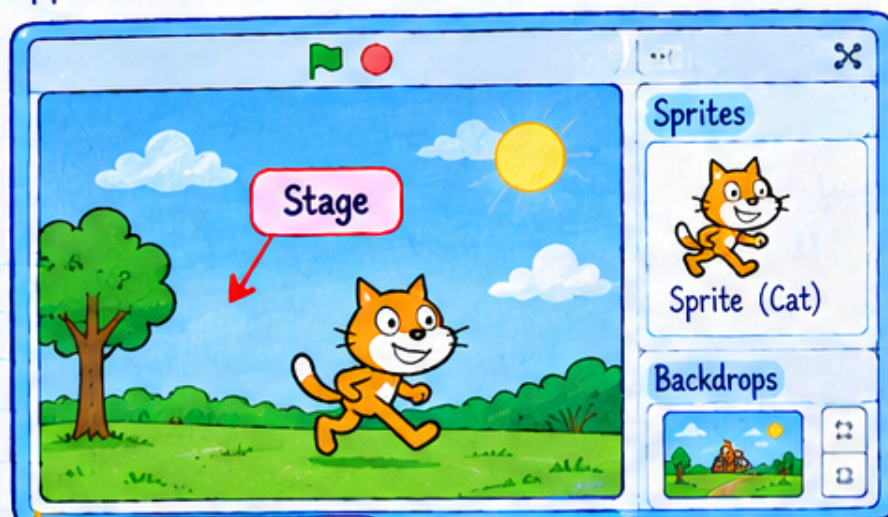


Important Point:

- ★ The backdrop should match the scene of the game or animation.

11. Stage

The **Stage** is the area where the Scratch project appears and where Sprites perform their actions.



Key Points

- ★ The Stage is like a screen.
- ★ Sprites perform their actions on the Stage.
- ★ We can change the size and look of the Stage using backdrops.

Remember

- ★ The Stage shows the output of our project i.e. the **final animation or game**.

12. Objects

Objects are other elements required in a game or animation.

Objects can be:

- Identified according to the requirement of the game.
- Imported into the project.
- Used along with Sprites and backdrops.

Important Point

- ★ Objects can be anything like coins, stars, obstacles, keys, food items, etc. depending on the theme of the game.

Examples of Objects



Star
(collectible)



Heart
(life/score)



Coin



Tree
(obstacle or decoration)



Rock
(obstacle)



Apple
(to collect)



Key
(to open)



Ball
(for play)

Objects make the game more interesting and challenging!



13. Creating Images Using AI

An **AI image generator** creates an image from a description given by the user.

The description or keyword given to an AI image generator is called a **text prompt**.

Steps

- Choose an AI image generator.
- Enter a simple description / text prompt.
- Explore different options and styles.
- Refine the description.
- Experiment with different prompts.
- Download or save the image.
- Use the image in the project.

Example

- ★ Prompt: "A cat flying in the sky."



Refining the Prompt

- ★ Change the size of the cat.
- ★ Add a background (e.g., sky, mountains).
- ★ Try different styles (cartoon, realistic).
- ★ You can experiment with more prompts to get better images.



Remember

We can use AI generated images as Sprites or Backdrops in our project.

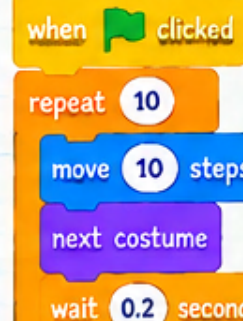
14. Animation in Scratch

A Sprite can be animated using different Scratch blocks.

Important Block Categories

Block Category	Main Use	
Motion	Move a Sprite	move 10 steps
Looks	Change appearance or show messages	say Hello! for 2 seconds
Sound	Add music and sound effects	play sound Meow
Events	Start or trigger actions	when clicked
Control	Control the flow of the program	repeat 10
Sensing	Detect conditions or interaction	touching edge?
Operators	Perform calculations and comparisons	1 + 1
Variables	Store values or information	set score to 0

Example: Simple Animation



Key Point

- ★ By combining different blocks, we can create animations for our Sprites.

15. Storyboard

A storyboard is a plan or a set of drawings that shows the story of a game or animation scene by scene.

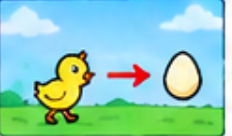
Why do we need a storyboard?

- ★ Helps in planning the game or animation.
- ★ Shows the main idea, characters and scenes.
- ★ Helps to organise the sequence of events.
- ★ Makes it easy to understand and create the project.

Elements of a Storyboard

Scene	Characters	Action	Dialogue / Text	Background
Where the action happens	Who is in the scene	What the character does	What the character says (if any)	Where it happens

Example Storyboard – Chick and Egg Game

Scene 1: Start	Scene 2: Move	Scene 3: Collect	Scene 4: Game Over
			
Chick is at the starting position. Text: "Collect the egg!"	Chick moves forward using arrow keys.	When the chick touches egg, score increases.	When all eggs are collected, show "Game Over" message.

Key Points

- ★ Draw simple pictures.
- ★ Show the order of scenes.
- ★ Think of actions, characters and dialogue.
- ★ Make changes if needed before coding.

Plan Before You Create!



16. Coding a Game

After planning with a storyboard, we can now code the game using Scratch blocks.

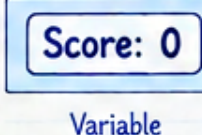
Steps to Code a Simple Game (Chick and Egg)

- 1 Choose a backdrop.
- 2 Add sprites (e.g., chick and egg).
- 3 Set starting position.
- 4 Add movement using arrow keys.
- 5 Add actions (collect egg, increase score).
- 6 Add sound and message.
- 7 Test the game and make improvements.

Remember

Use different blocks and try them to see what happens!

Sprites and Backdrop used in this Game

			
Chick (Player)	Egg (Collectible)	Backdrop (Field)	Variable (Score)

Example Blocks

```

when green flag clicked
  set x to -180
  set y to -100
  forever loop
    if key right arrow pressed? then
      change x by 10
    if touching Egg? then
      change score by 1
      play sound Collect
  
```

Coding Brings Your Ideas to Life!



17. Game Mechanics

Game mechanics are the rules and actions that control how the game works.

Common Game Mechanics

Movement	How the character moves (e.g., arrow keys).
Goal	What the player has to achieve (e.g., collect eggs).
Rules	Conditions to play the game (e.g., avoid obstacles).
Score	Points given for completing a task.
Levels	Different stages with increasing difficulty.
Lives	Number of chances (e.g., 3 lives).
Timer	Time limit to complete the game.
Obstacles	Objects to avoid (e.g., rocks, enemies).

Key Points

- ★ Good game mechanics make the game interesting and fun.
- ★ Keep the rules simple and clear.
- ★ Use score, levels, obstacles and sound to make the game challenging.

Example – Chick and Egg

- ★ Movement: Use arrow keys to move the chick.
- ★ Goal: Collect all eggs.
- ★ Score: +1 for each egg.
- ★ Obstacle (optional): Avoid rocks.
- ★ Level: Increase number of eggs in each level.
- ★ Game Over: When time is over or all eggs are collected.



Think!

How can you make your game more challenging?



18. Testing and Improving the Game

After coding, we should test the game and make improvements.

Why Testing is Important?

- ★ Helps to find mistakes (bugs).
- ★ Checks if the game works properly.
- ★ Makes the game more interesting and enjoyable.
- ★ Helps to improve the game.

Test Play Improve!



Steps for Testing

- 1 Run the game.
- 2 Check all controls (e.g., arrow keys).
- 3 See if score, sound and messages work.
- 4 Find and fix mistakes (bugs).
- 5 Play again to confirm the changes.

Common Problems (Bugs) and Solutions

Problem (Bug)	Solution
Sprite does not move	Check the movement blocks and key selection.
Score is not increasing	Check the variable blocks.
Sound does not play	Check the sound block and volume.
Game does not end	Check the condition for game over.
Sprites overlap	Adjust the position and use proper blocks.

Remember

- ★ Testing and improving help us to create a better and more interesting game!

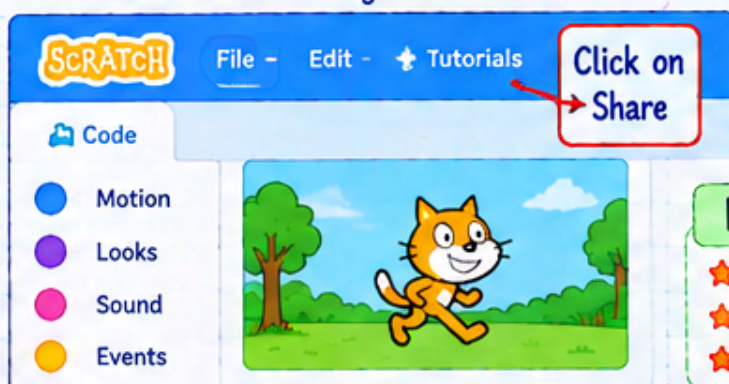


19. Sharing Your Game

After creating a game, we can share it with our friends, teachers and the Scratch community.

Steps to Share a Project

- 1 Log in to your Scratch account.
- 2 Click on File → Save now.
- 3 Give a suitable name to your project.
- 4 Click on the Share button.
- 5 Your project will be visible to the Scratch community.



Things to Keep in Mind

- ★ Share only appropriate and safe content.
- ★ Do not share personal information (name, address, phone number).
- ★ Use a good project name and description.
- ★ Follow the guidelines of the Scratch community.

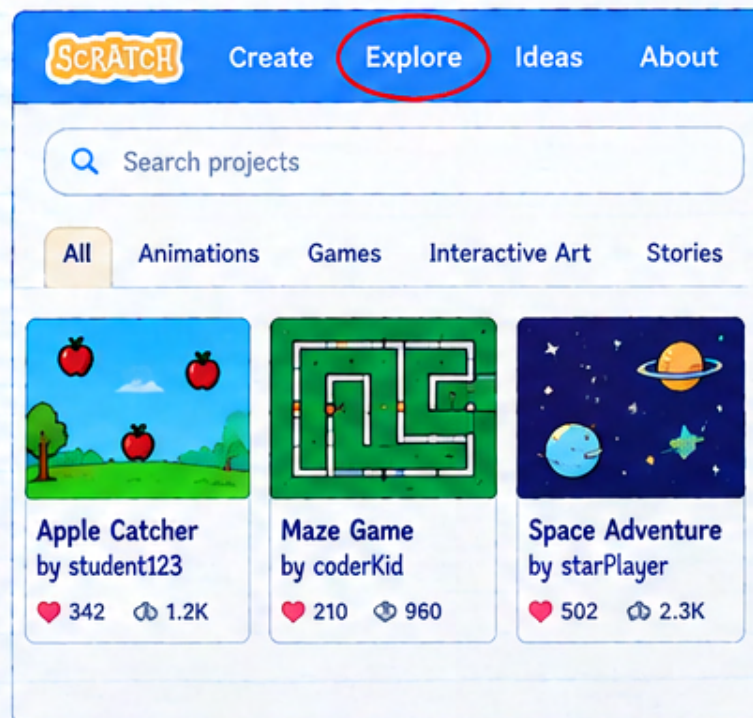
Sharing helps us get feedback and learn from others!

Key Points

- ★ We can share our games online.
- ★ We can get comments and suggestions.
- ★ We can also remix others' projects to learn new ideas.

20. Exploring and Learning from Others

We can explore games and animations created by other students in the Scratch community.



What Can We Do?

- 1 Click on Explore to see projects made by others.
- 2 Play different games and animations.
- 3 Read the project description.
- 4 See how the project is made (remix to learn).
- 5 Get new ideas for your own project.

Benefits of Exploring Others' Projects

- ★ We can learn new coding ideas.
- ★ We can see different types of games.
- ★ We can get inspiration for our own game.
- ★ We can improve our creativity and skills.

21. Making Changes and Adding Features

After testing our game, we can make changes and add new features to make it better and more interesting.

Possible Changes

- ★ Add more levels.
- ★ Add new characters or costumes.
- ★ Change the background.
- ★ Add sound and music.
- ★ Increase or decrease the difficulty level.
- ★ Add a timer or score.
- ★ Make the game more interactive.

Example - Adding a Score



We can use variables to keep track of score, level or lives.

Other Ideas



Small changes can make a big difference!

22. What Else Can I Do?

Scratch can be used to create many types of projects apart from simple games. We can be creative and try new ideas!

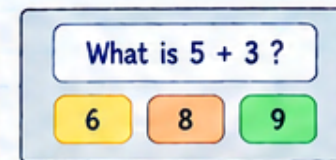
Other Project Ideas

- 1 Interactive stories
- 2 Quizzes
- 3 Educational games (e.g., Maths, Science)
- 4 Animated cartoons
- 5 Art and greeting cards
- 6 Simulations (e.g., traffic, weather)
- 7 Multiplayer games
- 8 Projects to solve real-life problems

Examples



Interactive Story



Quiz Game



Awareness Game



Simulation

Key Points

- ★ We can create many types of projects using Scratch.
- ★ We can use our imagination and solve real-life problems.
- ★ We can keep learning and improving our skills.

Be Creative!
There are many possibilities with Scratch!

