




# GAME DESIGN



## RATIONALE FOR ADVENTURE

Scouts will use technology safely in this adventure to make fun games fueled by their own ideas. They will learn to plan, organize, and execute those ideas while working as a team to create a finished product.

## TAKEAWAYS FOR CUB SCOUTS

- Using technology to create something fun
- Learning, then teaching others
- Teamwork
- Internet safety
- A Scout is trustworthy. 

*Webelos Handbook, page 386*

## ADVENTURE REQUIREMENTS

Complete the following requirements.

1. Decide on the elements for a game.
2. List at least five of the online safety rules that you put into practice while using the internet on your computer or smartphone. Skip this if your Cyber Chip is current.
3. Create your game.
4. Teach an adult or another Scout how to play your game.

### NOTES TO DEN LEADER

Before the adventure, you should do some research on what makes a good game and develop an understanding of the various game components. Reading the *Game Design* merit badge pamphlet is a great start. Review the suggested websites ahead of time and download any software the den might use.

If the Cyber Chip has not already been introduced, this would be a good opportunity to do so. Make sure that parents are aware of what Webelos Scouts will be doing in this elective. The Scouts should be reminded not to download anything from the internet without first getting permission from their parents.

You may want to invite parents to Meeting 2 where the den will review internet safety, the Internet Safety Pledge, and what to consider when downloading gaming software. This would give parents a chance to ask questions and get a better understanding of the elective.

See the appendix for optional den meeting activities, including openings, gatherings, and closings.

# MEETING 1 PLAN

## PREPARATION AND MATERIALS NEEDED

- U.S. and den flags
- Items for Gathering games: narrow-mouth jar; 10 clothespins per Scout; large hat or bucket; deck of playing cards
- Whiteboard and markers (or blackboard and chalk)
- Paper and pencils
- Computers for Scouts to use (or one computer with screen projector)

## GATHERING

- As Scouts arrive, have them play these two games:

**Clothespin Drop.** Place a narrow-mouth jar upright on the floor. Give each Scout in turn 10 clothespins and have them stand over the jar. They hold the pins at eye level and try to drop them in one at a time. Keep score on the number of pins each Scout drops into the jar.

**Card Toss.** Place a hat or bucket on the floor about 6 feet from a chair. Have Scouts take turns sitting in the chair and tossing playing cards one at a time into the hat or bucket. Keep score on the number of cards each Scout tosses in.

## OPENING

- The den forms a tight circle with the den flag in the center. Each Scout grasps the flagstaff with their left hand, makes the Scout sign with their right hand, and says the Scout Oath.

## TALK TIME

- Carry out business items for the den.
- Allow time for sharing among Webelos Scouts.
- Introduce the Game Design adventure to the members of your den and explain that at this meeting they will learn about game design and have some fun creating a game together. Review the different types of physical and virtual games they enjoy playing and what they like about each one. What parts of those games are the most fun? What makes some games more fun than others?
- Have the Scouts as a group come up with their own definition of what a game is. Examples include:
  - A game is something you play and can win.
  - A game is something you play with rules.
  - A game is something you can play by yourself or with others.
- Tell the Scouts that today, everyone will get to be a game designer. Review the following points with the den for designing a game. Write them on chart paper for Scouts to reference when creating their games. (In addition to the *Webelos Handbook*, you can find two good resources for this discussion at [www.eduweb.com/schaller-games.pdf](http://www.eduweb.com/schaller-games.pdf) and [serc.carleton.edu/introgeo/games/goodgame.html](http://serc.carleton.edu/introgeo/games/goodgame.html).)

**Narrative or Story.** What is the game about? What is the point of playing it?

**Goals and Mechanics.** What are the challenges you have to overcome in the game? How does a player win and what can players do to advance in the game?

**Aesthetics.** How does your game look and sound? Will it be colorful? What will your characters (players) see, feel, smell, and taste?

**Medium.** What are the materials and/or technologies needed to make your game possible? This may range from paper, pencils, and blocks to computers and lasers, etc.



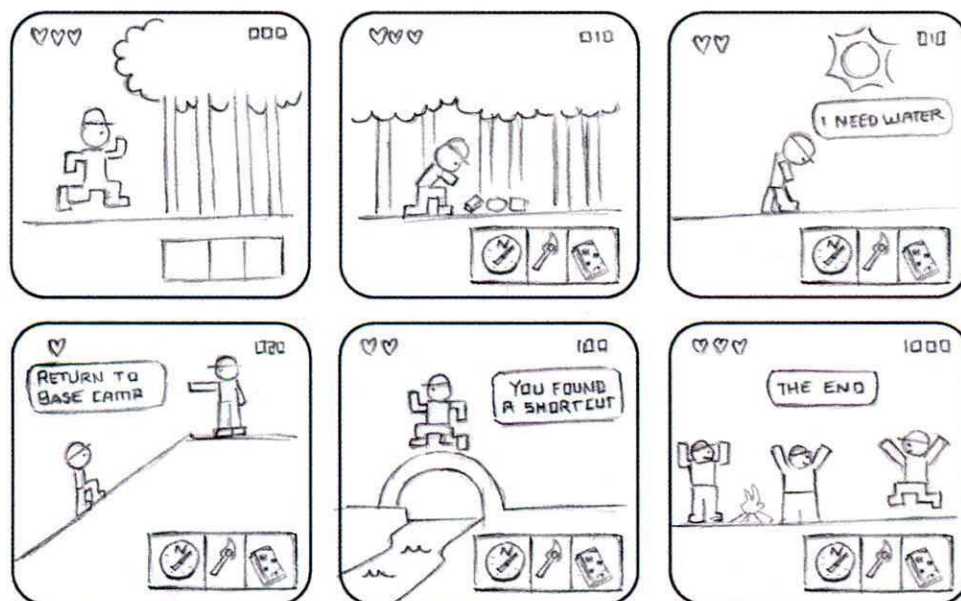
## ACTIVITIES

### ◆ Activity 1: Gamestorming (Requirement 1)

- Divide the den into game design teams of three or four Scouts each. Have each team brainstorm an idea for a game—asking and answering the questions above to make sure their game contains the four basic elements.
- They should then create a design document to record and organize their ideas for the game. The document must be written clearly in a way that a reader who is unfamiliar with the game can understand. It must address all four of the basic elements. The ideas in a design document are not necessarily final; they may change or add things after the document has been written. However, the document should then be updated to reflect the changes.
- Now, to help the teams better visualize their game ideas, have them create storyboards with scenes of what happens in the game and the sequence of events. The Moviemaking adventure has a basic storyboard template to copy, or Scouts could create their own on poster board. The storyboards may include but are not limited to:
  - Background (or setting where the game takes place)
  - Character(s)
  - Sounds
  - Points
  - Colors
  - Levels

### ◆ Activity 2: Presentation

- Each team will present its idea to the rest of the den using storyboards and game design documents.
- Have Scouts point out what they like about the ideas each team came up with. Remind everyone to be supportive—not discouraging—if they have any suggestions to offer, and to be patient when listening to other teams' ideas. (A Scout is helpful, courteous.)



### ◆ Activity 3: Game Creation Software

- Ask whether any of the Scouts have used game creation software programs before and, if so, which ones they used. Mention some of the free programs online like Scratch (<https://scratch.mit.edu>) that they can use to make their own games.



#### Do-at-Home Project Reminder:

Before the next meeting—and with the permission and supervision of their parents—Scouts will browse the Scratch website and, if possible, download the program and watch a few tutorials to get acquainted with it. Scouts designing a non-video game should bring any necessary supplies to the next meeting.



## CLOSING

- Form a circle. Starting with the denner and moving right, have the Scouts mention something they enjoyed learning at this meeting.

## AFTER THE MEETING

- Serve refreshments, if desired.
- Work together to clean up the meeting place.
- Record completion of requirement 1.

# MEETING 2 PLAN

## PREPARATION AND MATERIALS NEEDED

- U.S. and den flags
- Items for Gathering activities: dried beans, pencils, and the Computer Match game (one copy per Scout)
- Copies of the following handouts (one per Scout; see Meeting 2 Resources):
  - Internet Safety Pledge
  - Create Your Own Game Using Scratch
  - Appropriate Video, Computer, and Mobile Games
- Markers and paper for Activity 1
- Materials for Making Games (Activity 2):
  - Set up computers with the Scratch program loaded for making video games (for teams that designed video games last week).
  - If any team designed a non-video game, have those Scouts bring the items and supplies they need to create the game.

## GATHERING

As Scouts arrive, have them play these two games:

- **Bean Balance.** Give these directions to Scouts: Pick up a dried bean with your left hand. Transfer the bean to your right hand, then put the bean on the back of your left hand. While still balancing that bean, pick up another one with your left hand, transfer it to the right, and back again—repeating the process until a bean falls off. The Scout who balances the most beans wins.
- **Computer Match.** Give each member of the den a copy of this game (in Meeting 2 Resources) to see how many computer terms can match with the definitions.

## OPENING

- Conduct a flag ceremony of your choosing that includes the Pledge of Allegiance and the Scout Oath and Scout Law.
- Proudly stand together and give your den yell!

## TALK TIME

- Carry out business items for the den.
- Allow time for sharing among Webelos Scouts.
- If any of the teams didn't get a chance to present their game idea in the first meeting, have them do so now.
- Ask the Scouts what games they have played on the internet. Do they know the safety rules to follow when doing anything online? Review the Internet Safety Pledge (Meeting 2 Resources).



## ACTIVITIES

### ◆ Activity 1: Bringing Your Game to Life

- Explain to Scouts how real-life game designers test to see if their game ideas work by role-playing the games. Have each team test their idea together. They can do this by acting out what they put in their storyboards and game design documents.
- This may require materials like markers and paper to bring their games to life, so provide as needed. Ask Scouts if they discovered anything that can improve their ideas and to share it with other game design teams.

### ◆ Activity 2: Making Games (Requirement 3)

- Give each team the following options:
  - If the game they designed last week was a video game, see if the team can create it here using the computers you set up and the “Create Your Own Game Using Scratch” handout. If necessary, the games may be finished at home, but make sure each Scout has parental permission.
  - If a team designed a non-video game, have them create it here using the items and supplies they brought. These games may also be finished at home.
- All teams will share their games with the rest of the den at Meeting 3.

## CLOSING

Form a circle and have den members pass the Scout handshake around until it reaches the Scout who started it. As Scouts receive the handshake, they silently make a wish and pledge to do their best and Be Prepared.



### **Do-at-Home Project Reminder:**

Teams that haven't yet finished their games will do so at home before Meeting 3. If working on a computer and/or browsing online, each Scout must have parental permission. Next week the Scouts will teach their games to the other den members, and everyone will get a chance to play them (requirement 4). Invite parents to attend and join in the fun.

Also at Meeting 3, each Scout will say the five rules they follow when going online with a computer or smartphone, according to the Internet Safety Pledge (requirement 2).

Finally, suggest that each Scout play one of the video, computer, or mobile games, with approval from a parent or guardian, that you listed in another handout (see Meeting 2 Resources)—and be ready to identify the story, goals, aesthetics, and medium of that game.

## AFTER THE MEETING

- Serve refreshments, if desired.
- Work together to clean up the meeting place.

# MEETING 2 RESOURCES

## GATHERING

### ◆ Computer Match

Match each of these computer-related terms with its definition.

- |                  |  |
|------------------|--|
| 1. Data          | A. A set of steps or a list of instructions that tells a computer to do something.   |
| 2. Input         | B. The process that a computer goes through when you turn it on. It gets itself ready for you to use.  |
| 3. Process       | C. A portable, battery-powered computer, small enough to comfortably fit on a person's lap.  |
| 4. Output        | D. A worldwide network of computers that allows people to exchange information with machines all over the world.                                       |
| 5. Internet      | E. A small package containing important electronic circuits.   |
| 6. Program       | F. Material that is stored in a computer. It can be letters, words, paragraphs, decisions, pictures, or even ideas.                                    |
| 7. Laptop        | G. Convert data into information.  |
| 8. Computer Chip | H. Information that is given out by the computer. This information may be displayed on a screen, printed on a printing device, or shown in other ways. |
| 9. Hard Disk     | I. Data that is given to a computer. Usually this data will be processed into information.   |
| 10. Booting      | J. Permanent memory device.  |

Answers (by number): 1-F; 2-I; 3-G; 4-H; 5-D; 6-A; 7-C; 8-E; 9-J; 10-K; 11-B  
Answers (by letter): A-6; B-11; C-7; D-5; E-8; F-1; G-3; H-4; I-2; J-9; K-10

## TALK TIME

### Internet Safety Pledge

1. I will tell my trusted adult if anything makes me feel sad, scared, confused, or uncomfortable.
2. I will ask my trusted adult before posting photos or sharing information like my name, address, current location, or phone number.
3. I won't meet face-to-face with anyone I meet in the digital world.
4. I will respect the online property of others.
5. I will always use good "netiquette" and not be rude or mean online.

## ACTIVITIES

### Activity 2: Making Games

Create Your Own Game Using Scratch (<https://scratch.mit.edu>)

To get started:

<https://resources.scratch.mit.edu/www/guides/en/Getting-Started-Guide-Scratch2.pdf>

To create your own program:

[https://scratch.mit.edu/projects/editor/?tip\\_bar=home](https://scratch.mit.edu/projects/editor/?tip_bar=home)



You can create a simple character by either uploading an image, choosing from the available library of images, or drawing one in Paint. Then you can easily give it a simple animation using the basic kid-friendly coding language where you place one command ("Walk 10 steps") into another command ("When I press space bar").

Video tutorials: <https://scratch.mit.edu/search/projects?q=tutorials>

Intro article on the whys and hows of Scratch:

<http://web.media.mit.edu/~mres/papers/Scratch-CACM-final.pdf>

Intro video, webinars, and video tutorials for making your first Scratch project:

<http://scratched.gse.harvard.edu/resources/new-scratch>

### **Appropriate Video, Computer, and Mobile Games**

Video games on consoles:

- Mario Kart
- Skylanders Spiro's Adventure
- Lego Harry Potter
- Super Mario 3D Land

Computer Games:

- Roblox: [www.roblox.com](http://www.roblox.com)
- Minecraft: <https://minecraft.net>
- Super Hero Squad: [www.theheroup.com/new-visitor](http://www.theheroup.com/new-visitor)

Mobile (iPad/iPhone) Games:

- Cut the Rope: [www.cuttherope.net](http://www.cuttherope.net)
- Words With Friends: <https://zynga.com/games/words-friends>
- Angry Birds: [www.angrybirds.com](http://www.angrybirds.com)

## **MEETING 3 PLAN**

### **PREPARATION AND MATERIALS NEEDED**

- U.S. and den flags
- Computers
- Computer games
- 26 index cards with a letter of the alphabet on each one (three sets)

### **GATHERING**

- As Scouts arrive, they will choose seven letters from the index cards and then try to make words out of those letters that relate to Scouting.

### **OPENING**

- Conduct a flag ceremony of your choosing that includes the Pledge of Allegiance and the Scout Oath and Scout Law.
- Have Scouts reflect for a minute on the Scout Law. Choose one of the 12 points of the Law and discuss how it relates to playing games. Include the parents in the Opening.

## TALK TIME

- Carry out business items for the den.
- Allow time for sharing among Webelos Scouts.
- Discuss the five rules of the Internet Safety Pledge and how to put those rules into practice when using the internet (requirement 2).
- Ask if the Scouts played some of the suggested video, computer, and mobile games. Did they see how the four basic elements—narrative or story, goals and mechanics, aesthetics, and medium—fit into those games?

## ACTIVITIES

### ◆ Activity 1: Sharing the Games (Requirement 4)

- Scouts will teach and play each other's games. It may be best to do this in rotation, with separate stations set up for each game. Be sure to have enough computers on hand for games that require them.
- Consider posting a parent or volunteer at each station so they can also learn the game. As the games are being taught, adults should lead the Scouts in reviewing how the game uses the four basic elements.
- After each game has been played, Scouts will discuss how it went, what they enjoyed about the game, and how it might be improved.

## CLOSING

- Scouts and parents join hands in a circle. The den leader or den chief begins by squeezing the hand of the person on the right. As they each squeeze a hand, have them think about something that they are thankful for.

## AFTER THE MEETING

- Serve refreshments, if desired.
- Work together to clean up the meeting place.
- Record completion of requirements 2, 3, and 4.

Upon completion of the Game Design adventure, your Webelos Scouts will have earned the adventure pin shown here. Make sure they are recognized for their completion by presenting the adventure pins, to be worn on their uniforms, as soon as possible according to your pack's tradition.

