

2019



AP Minecraft

Scoring Guidelines

1. Designing redstone circuits is an important part of Minecraft. Answer the following parts of this question about redstone circuits.

a) Briefly identify how both of the following could limit the functionality of a redstone torch in a circuit.

i) Lag from block updates

[2 points] Identifies that changes in light levels brought upon by a redstone torch turning on and off repeatedly will cause block updates to surrounding blocks.
 [1 point] Identifies that the redstone torch has a separate storage ID when on and off.
 [0.5-1.5 points] A partially correct answer that would have been worth 2 points.

ii) Robustness (update speed)

[2 points] Identifies that if a redstone torch is triggered in rapid succession, it can “burn out”, causing it to remain off for several seconds.
 [1 points] Identifies that the redstone torch has a tic speed delay.
 [0.5-1.5 points] A partially correct answer that would have been worth 2 points.

b) Complete the last three rows of the following logic table, which shows the output (ON or OFF) for a logic gate given the inputs (ON or OFF) for A and B. The first two rows have already been correctly filled in.

Inputs (Across) Gates (Down)	A = ON B = ON	A = ON B = OFF	A = OFF B = ON	A = OFF B = OFF
NOT A	OFF	OFF	ON	ON
A AND B	ON	OFF	OFF	OFF
A OR B	<u>ON</u>	<u>ON</u>	<u>ON</u>	<u>OFF</u>
A NOR B	<u>OFF</u>	<u>OFF</u>	<u>OFF</u>	<u>ON</u>
A XOR B	<u>OFF</u>	<u>ON</u>	<u>ON</u>	<u>OFF</u>

1 point is earned for each correctly labeled row, for a maximum of 3 points.

- c) Using only the blocks listed below, draw two redstone clocks. On the left, draw a redstone clock with a **shorter** delay than the clock on the right. The clock must operate with no player interaction. Assume that all blocks are placed simultaneously.

You may use:

- Stone blocks (opaque)
- Redstone dust
- Redstone torches
- Redstone repeaters

Left (shorter delay)

Right (longer delay)

[4 points] Correctly draws both clocks, with proper delay differences.
[2 points] One clock is correctly drawn, but the other clock earns no points.
[0.5-3.5 points] A partially correct answer that would have been worth 4 points.

Item Specific Penalties:

[1.5 points] The clock requires player interaction (such as block being broken).
[1.5 points] The clocks both have the same delay.
[1 point] The clock on the left has a longer delay than the clock on the right.
[1 point] Redstone devices not listed in the question are used.
[0 points] Some **building block** other than stone blocks (such as dirt) is used.

- d) Identify and explain one potential use for a block update detector (BUD).

[3 points] Identifies and explains a potential use for a BUD.
[1.5 points] Student clearly understands what a BUD is but fails to provide a logical example and explain that example in context properly.
[1 point] Identifies a specific use for a BUD without any explanation.
[0 points] Student clearly does not understand what a BUD is.

2. Mobs, short for “mobiles”, are a key component to Minecraft. Answer the following parts of this question about mobs.
- a) Explain why the zombie pigman is considered neutral, whereas the zombie is considered hostile.

[2 points] Explains that zombies attack the player without being attacked, while the zombie pigman only attacks once attacked.

[2 point] Identifies that a horde of pigmen will attack when one member of the horde is attacked.

[0 points] Attempts to explain in terms of the player “looking at” the mob (such as with the enderman).

- b) From the list of 8 mobs below, identify which are **passive**, which are **neutral**, and which are **hostile**.

- Cave Spider
- Cow
- Creeper
- Rabbit
- Slime
- Spider
- Villager
- Wolf

Passive

Neutral

Hostile

Cow

Cave Spider

Creeper

Rabbit

Spider

Slime

Villager

Wolf

[3 points] 8 mobs are correctly identified.

[2.5 points] 7 mobs are correctly identified.

[2 points] 6 mobs are correctly identified.

[1.5 points] 5 mobs are correctly identified.

[1 points] 4 mobs are correctly identified.

[0.5 points] 2 or 3 mobs are correctly identified.

[0 points] 0 or 1 mobs are correctly identified.

c) Drops (also called loot) are items that appear when some mobs are killed. For each mob below, indicate **two** common drops. (*Note that armor and tools are **not** common drops because they are dropped less than 10% of the time*).

i) Iron golem

Poppies (*Roses are also accepted, although the item was renamed as of 1.7.2*)

Iron Ingots

ii) Sheep

Wool

Mutton (*Does not need to be specified as cooked or raw, but it will not count as two drops if only both types of mutton are used*)

iii) Spider

Spider eyes

String

iv) Skeleton

Bones

Arrows

v) Witch

Any two of the following: **Glass Bottles** **Glowstone Dust** **Gunpowder** **Redstone**

Spider Eyes **Sugar** **Sticks**

0.5 points are earned for each correctly identified item (maximum of 1 point per part). If more than two items are given for a single part, only the first two items listed are considered.

d) Briefly describe how to build an enderman experience farm in the end. Your farm must function **without** players having to look at the enderman.

[3 points] A reasonable enderman farm is described, such as the piston-vine design or the endermite platform design.

[0.5-2.5 points] A partially correct response that would have been worth 3 points

Item Specific Penalties:

[1.5 points] The farm requires the player to look at the enderman.

[1.5 points] The enderman does not drop experience in the design farm.

3. For each of the following four parts, circle the correct properties of the given block/item in part (i) and show a crafting recipe for the respective item in the window provided in part (ii). Assume in part (ii) that all items are available, except when otherwise indicated.

EXAMPLE:

Item/Block: Torch

- (i) Item is dropped when the block is punched.

YES

NO

Block gives off light.

YES

NO

Block is flammable.

YES

NO

- (ii) Craft a torch, given that coal is not available.

	Charcoal	
	Stick	

The four parts (a-d) of question 3 are scored as follows:

[2 points] 3 yes/no questions and the crafting recipe.

[1.5 points] 2 yes/no questions and the crafting recipe.

[1 point] 0 or 1 yes/no questions and the crafting recipe.

[1 point] 3 yes/no questions.

[0.5 points] 2 yes/no questions.

[0 points] 0 or 1 yes/no questions.

Special Note:

If all the components of a crafting recipe are there (in correct quantities), but in the wrong order, 0.5 points will be added to the total above (for a maximum of 1.5 points for that part).

(a) Item/Block: Brewing Stand

(i) Item is dropped when the block is mined with a wooden pickaxe.

YES

NO

Block is opaque.

YES

NO

Up to 64 of the item can be stacked in a single inventory slot.

YES

NO

(ii) Craft a brewing stand.

	Blaze Rod	
Cobblestone	Cobblestone	Cobblestone

OR

	Blaze Rod	
Cobblestone	Cobblestone	Cobblestone

(b) Item/Block: Sign

(i) Item is dropped when block is mined with a wooden shovel.

YES

NO

Block is flammable.

YES

NO

Up to 64 of the item can be stacked in a single inventory slot.

YES

NO

(ii) Craft a sign.

Plank	Plank	Plank
Plank	Plank	Plank
	Stick	

(c) Item/Block: Dispenser

(iii) Block breaks if the block below it is broken.

YES **NO**

Block is dropped when mined with a wooden shovel.

YES **NO**

Block can make a noise when activated by redstone.

YES **NO**

(iv) Craft a dispenser.

Cobblestone	Cobblestone	Cobblestone
Cobblestone	Bow	Cobblestone
Cobblestone	Redstone	Cobblestone

(d) Item/Block: Iron Boots

(iii) Item can be dyed.

YES **NO**

Item can be burned in a furnace.

YES **NO**

Item can be obtained through trading with a villager.

YES **NO**

(i) Craft iron boots.

Iron Ingot		Iron Ingot
Iron Ingot		Iron Ingot

OR

Iron Ingot		Iron Ingot
Iron Ingot		Iron Ingot

4. According to the official Minecraft wiki, “Being a sandbox game, there is no true end to Minecraft. However, it is possible to ‘complete’ the game upon killing the ender dragon”.

Minecrafters debate what the hardest task in Minecraft is. Consider the following tasks:

- Killing the ender dragon
- Building a haste II beacon

Write a short essay in which you develop your own position on which of the two tasks above is harder in survival Minecraft: killing the ender dragon or building a haste II beacon. Use appropriate, specific evidence to illustrate and develop your position.

AP Minecraft Argumentative Essay Rubric

Question #4

Introduction	Provides context to the essay and organizes the essay from general to specific	0 – 2
Thesis	A specific statement that gives the stance of the essay. Must be one or more sentences and briefly describe a defensible position	0 – 2
Evidence	Provides specific evidence. Evidence should comprise a substantial amount of the essay’s content and be relevant to the thesis	0 – 7
Argument	Explains of how evidence supports the thesis	0 – 3
Synthesis or Rebuttal	Extends the essay into another related issue OR Addresses an opposing thesis in detail	0 – 2