

**BitWith Bite**

PYGAME MASTERY WORKSHEET

**Sprites**

Chapter: Pygame Mastery · Level ★★★ · Time: 25 min

SCORE

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Name _____ Class _____ Date _____

AFTER THIS WORKSHEET YOU CAN

- ✓ Build a Sprite subclass with image and rect
- ✓ Update and draw hundreds of objects with a Group
- ✓ Control draw order with LayeredUpdates
- ✓ Slice sprite sheets and drive animation states

QUICK RECAP

Pygame's Sprite class and Group system give every game object a standard shape — an image, a rect, and update/draw logic — so hundreds of enemies, bullets, or coins can be managed with just a few lines of code. LayeredUpdates adds explicit draw ordering, and sprite sheets let one image supply every animation frame a character needs.

**Section A · Concept Check**

• INTERMEDIATE

4 × 1 = 4

- 1 Every pygame.sprite.Sprite subclass must define:
 - ☐ A. self.speed and self.direction
 - ☐ B. self.image and self.rect
 - ☐ C. self.x and self.y
 - ☐ D. self.color and self.size
- 2 Calling group.draw(screen) does:
 - ☐ A. Deletes every sprite in the group
 - ☐ B. Blits every sprite's image at its rect
 - ☐ C. Calls update() on every sprite
 - ☐ D. Creates a new empty group
- 3 Which class controls draw order using explicit layers?
 - ☐ A. pygame.sprite.Group
 - ☐ B. pygame.sprite.LayeredUpdates
 - ☐ C. pygame.Surface
 - ☐ D. pygame.Rect
- 4 The main benefit of slicing a sprite sheet once at load time is:
 - ☐ A. Smaller file size on disk
 - ☐ B. Avoids paying the slicing cost every frame
 - ☐ C. Pygame requires it by law
 - ☐ D. No performance effect either way

**Section B · Problem Solving**

• INTERMEDIATE

2 + 3×3 = 11

- 5 Calling group.update() calls the _____ method on every sprite inside it.
- 6 To remove a sprite from every group it belongs to in one line, call sprite._____.()
- 7 Name the two attributes every Sprite subclass must define, and what each one is for.

- 8 Why should you always call super().__init__() first inside a Sprite subclass's __init__?

- 9 Explain why slicing a sprite sheet once at load time (rather than every frame) matters for performance.



Section C · Challenge

• CHALLENGE

5

10 You have a background sprite, a player sprite, and a HUD sprite that must always draw in that exact order no matter when they were added to the group. Which sprite container would you use, and how would you set it up?

Reflection — the most useful thing I learned: _____

A ___/4

B ___/11

C ___/5

Total ___/20

Teacher's Signature

Parent's Signature

⌘ ANSWER KEY — FOLD OR CUT BEFORE HANDING OUT

1-B 2-B 3-B 4-B | 5 update 6 kill 7 = self.image (the Surface drawn) and self.rect (position used for drawing/collisions) 8 = it wires the object into Pygame's internal sprite bookkeeping so it can be added to Groups correctly 9 = slicing costs time; doing it once avoids repeating that cost 60 times a second, keeping frame rate high | 10 = pygame.sprite.LayeredUpdates, adding each sprite with an explicit layer (background=0, player=1, HUD=2) — draw() then respects layer order regardless of add() order