

QUICK REVIEW

Quick Review: Work, Energy, and Power

Refresh the most important ideas, formulas, and problem-solving strategies for Work, Energy, and Power in just a few minutes.

 TIME 5–10 minutes	 BEST FOR A rapid refresh	 FINISH WITH Key ideas refreshed
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After this quick review, you'll be able to...

quickly recall the essential concepts, formulas, and problem-solving strategies needed to move forward with confidence.

HOW TO USE THIS GUIDE

Work through the four stages in order. Write directly in the spaces provided, check your work in the Quick Answers section, and finish by choosing the next resource that matches your confidence.

Choose how you want to review: work through this guide, follow the online review, or watch the video review.

[Start the Review Online →](#)

[Watch the Video Review →](#)

YOU WILL NEED

Pencil or pen • Calculator if needed • Approximately 5–10 minutes

FR-02 • TOPIC ALIGNMENT

Topic Alignment

This bundle is aligned to the approved Physics Sensei topic specification below. Use it to recover the topic structure, reinforce key decisions, and confirm readiness for the next study task.

ARCHITECTURE: Physics Sensei Independent Mechanics UNIT: MEC-U06 — Work, Energy, and Power TOPIC: Unit Review — Work, Energy, and Power PROFILE: Algebra-Based	BEST USED ✓ Before algebra-based energy homework ✓ Before a quiz or exam ✓ When you need a fast equation-selection strategy
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Review Prerequisites →

Physics Sensei is an independent educational resource designed to complement independently authored Physics Sensei materials. Physics Sensei content is independently authored and organized under the approved topic architecture.

FR-03 • YOUR REVIEW PLAN

Your Review Plan

Complete these four stages to quickly refresh the essential ideas and confirm you're ready to continue.

4 stages • Approximately 5–10 minutes

1 Quick Recall — page 4 Refresh what you already know.	2 Essential Idea — page 5 Review the most important concept.
3 Confidence Check — page 6 Confirm you're ready to move on.	4 Next Step — page 8 Continue your learning.

PRINTING TIP

For student copies, print double-sided and keep the Quick Answers section after the student activities so learners attempt each activity before checking their work.

FR-04 • STAGE 1 OF 4

Quick Recall

Let's quickly refresh what you already know. This short recall activity will bring the most important ideas back to mind before you review them.

QUICK RECALL

Core work-energy equations

Write the relationships you are most likely to need.

Write the equations for constant-force work, kinetic energy, gravitational potential energy, elastic potential energy, and conservation of mechanical energy.

Ready to refresh the essentials?

Great! Now review the most important idea you'll want to remember.

Continue to Essential Idea — page 5 →

FR-05 • STAGE 2 OF 4

Essential Idea

Take one last look at the most important concept from this topic. If you remember this idea, the rest will come back much more easily.

ESSENTIAL IDEA

Choose the energy equation that matches the system

Use net work when forces directly determine a change in kinetic energy. Use conservation of mechanical energy when only conservative interactions matter. Add external or nonconservative work when mechanical energy changes.

$$W = Fd \cos \theta \quad \bullet \quad W_{\text{net}} = \Delta K \quad \bullet \quad K = \frac{1}{2}mv^2$$

EXAMPLE If a 2.0 kg object starts from rest and the net work on it is 36 J, then $K_f = 36 \text{ J}$ and $v = 6.0 \text{ m/s}$.

SENSEI NOTE Energy methods are often faster than combining Newton's second law with kinematics because they connect states directly.

Ready to check your memory?

You've refreshed the essential idea. Now see how much you remember before moving on.

[Continue to Confidence Check — page 6 →](#)

FR-06 • STAGE 3 OF 4

Confidence Check

You've refreshed the essential idea. Now answer this quick confidence check to confirm you're ready to move on.

CONFIDENCE CHECK

Net work to final speed

Apply the work-energy theorem directly.

A 2.0 kg object starts from rest. The net work on it is 36 J. What is its final speed?

Ready for your next step?

Great work! You've refreshed the essential idea. Now choose the resource that best matches what you'd like to do next.

Continue to Next Step — page 8 →

QUICK ANSWERS • CHECK AFTER ATTEMPTING

Quick Answers and Explanations

Use these concise answers to check your recall and confidence—not only your final response.

QUICK RECALL

Core work-energy equations

$W = Fd \cos \theta$; $K = \frac{1}{2}mv^2$; $U_g = mgy$; $U_s = \frac{1}{2}kx^2$; and $K_i + U_i = K_f + U_f$ when mechanical energy is conserved.

WHY IT WORKS These equations connect force and displacement to energy transfer and connect initial and final states without requiring time or acceleration.

CONFIDENCE CHECK

CONFIDENCE CHECK

Net work to final speed

6.0 m/s.

WHY IT WORKS $W_{\text{net}} = \Delta K = 36 \text{ J}$. Since $K_i = 0$, $\frac{1}{2}(2.0)v^2 = 36$, so $v = 6.0 \text{ m/s}$.

READINESS GUIDE

1 correct: You're ready to continue. • 0 correct: Revisit the Essential Idea or choose more practice.

FR-07 • STAGE 4 OF 4

Next Step: Continue Learning

Great work! You've completed this quick review. Choose the next resource that best matches how confident you feel.

 I'm Still Unsure Review the essential idea again. Review again: return to Essential Idea on page 5.	 I Need More Practice Continue with additional practice for this topic. Go to Practice →	 I'm Ready Continue to the next recommended resource. Continue →
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RECOMMENDED LINKS

Review again: return to Essential Idea on page 5.

Find additional practice →

Choose another type of physics help →

Continue reviewing with these companion resources.

Start the Review Online →

Watch the Video Review →

PHYSICS HELP THAT MAKES SENSE

A Physics Sensei review never ends at the last question. It always guides you toward the next useful step.

PhysicsSensei.com