

GRADE 3 LEARNING PACK

# Forces: Friction, Air Resistance & Motion

Investigate how contact forces and air resistance affect motion in simple systems.

**LEARN • PRACTISE • CREATE • REFLECT**

Original BrightPencil Kids resource - adult-led where appropriate

A4 edition • 12 purposeful pages • review copy

**Print. Learn. Grow.**

# Grown-up guide

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## Learning objective

Investigate how contact forces and air resistance affect motion in simple systems.

## Use this pack well

- Model the first example aloud, then let the learner try.
- Ask “How do you know?” more often than “Are you finished?”.
- Use real objects, talk, movement or observation when the activity suggests it.
- Stop or shorten the session if attention or enjoyment drops.
- Open-ended pages can have many successful answers.

## Quality note

This resource was written originally for BrightPencil Kids. Curriculum sources informed scope and progression only; no third-party worksheet or story text is reproduced.

# Learn the idea

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**1** Friction acts between surfaces and can slow relative motion.

**2** Air resistance is a force that acts against motion through air.

**3** A fair comparison changes one main factor while keeping others similar.

## Talk about it

Explain one idea in your own words. Give an example from real life, a drawing or an object if that helps.

Compare toy movement on rough and smooth surfaces.

Predict which paper shape falls more slowly and why.

Identify what should stay the same in a parachute test.

Give one useful and one unwanted example of friction.

Interpret repeated distance or time measurements.

## Try it beyond the page

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### Real-world / hands-on connection

With an adult, compare two paper parachute designs dropped from the same safe height.

### Before you finish

What did you notice?

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What evidence, object or example helped you?

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What would you change if you tried again?

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# Create something

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## Your project

**Design a paper parachute test sheet with prediction, variables, repeated trials and conclusion.**

Use this space for planning, drawing, mapping, designing or notes.

CHALLENGE

# Think deeper

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1. Is friction always “bad”?

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2. Why repeat a drop test?

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3. What does air resistance do?

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# Quick review

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1. In one sentence, explain the big idea of “Forces: Friction, Air Resistance & Motion”.

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2. Draw or write one example that shows you understand.

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3. Choose one activity from this pack and explain the strategy you used.

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4. Write one question you still have.

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# Answer & discussion notes

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Use these as guidance, not scripts. Open questions can have different successful responses when the reasoning is sensible and evidence-based.

## 1. Suggested response

No.

## 2. Suggested response

To see whether the result is consistent.

## 3. Suggested response

It opposes motion through air.

## Review before publication

Check age fit, factual accuracy, clarity, accessibility, rights provenance and whether the activity works in practice. This file remains a review copy until those checks are signed off.

FINISH

# My learning reflection

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**I finished this BrightPencil learning pack.**

**One thing I understand better now:**

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**A strategy that helped me:**

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**Something I created or noticed:**

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**My next small question or goal:**

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