

**FIRST LESSONS ON
NATURAL PHILOSOPHY,
FOR CHILDREN: IN TWO
PARTS. PART SECOND**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649583812

First Lessons on Natural Philosophy, for Children: In Two Parts. Part Second by Mary A. Swift

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NATURAL PHILOSOPHY,
FOR CHILDREN: IN TWO
PARTS. PART SECOND**

FIRST LESSONS
OR
NATURAL PHILOSOPHY,
FOR CHILDREN.

In Two Parts.
PART SECOND.

BY MARY A. SWIFT.

NEW EDITION, ENLARGED AND IMPROVED.

HARTFORD:
WILLIAM J. HAMERSLEY, PUBLISHER.
PHILADELPHIA: J. B. LIPPINCOTT & CO.
1862.

Buhr/Science

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12-8-05

Preface.

THE favorable reception given to the "FIRST PART OF LESSONS ABOUT NATURAL PHILOSOPHY," encouraged the writer to offer to parents and teachers of primary schools, the "SECOND PART."

It was received with the same approbation extended to its predecessor, and is now respectfully presented in an enlarged and improved form.

Lesson First.



WHAT does *Natural Philosophy* teach us?

It teaches us, about the matter that all bodies are made of, and about the properties of

bodies.

What is a BODY?

A body is any thing made of matter.

You have learned about the Attraction of Cohesion—is this property found in all bodies?

It is; but it is stronger in some bodies than it is in others.

In what bodies is it the strongest?

In *hard* bodies.

Do we call hard bodies by any other name?

We call them *solid* bodies, or *solids*.

Can you mention some solid bodies?

Wood, and stone, and iron are solid bodies.

Are cork and sponge solid bodies?

They are.

But they are SOFT bodies—are SOFT bodies solids?

They are.

Why are some solids HARD, and other solids soft?

Because the attraction of cohesion is stronger in hard bodies than in soft bodies.

What do you mean by the attraction of cohesion? †

The attraction of cohesion is the power of sticking together, which God has given to the little particles of bodies.

If you make clay and dough into any shape, why will they remain in that shape?

Because they are *solid* bodies.

Why could you not make milk and oil into any shape?

Because they are *not* solid bodies.

What are they called?

They are called *Liquids*.

If I should place a solid and a liquid upon a table, how could you tell which was the SOLID?

The solid would remain upon the table as you placed it.

What would the LIQUID do?

It would flow on the table, or down from the table to the floor.

Why would the liquid act so differently from the solid?

Because the attraction of cohesion is so much stronger in the solid, and keeps the particles close together.

Do the particles of liquids attract each other at all?

They do.

How do we know they do?

If I dip my finger in a liquid, when I take

it out, a drop will stay on the end of my finger.

What makes the shape of drops of rain and dew?

The attraction of cohesion, that draws together the little particles of water.

What is a LIQUID?

A *Liquid* is something that *flows* like water.

Have liquids any other name?

They have; they are sometimes called *Fluids*.

Do all FLUIDS flow like water?

Not all; there are some fluids that are different from water and oil.

Are steam and air solids?

They are not.

How do you know they are not?

Because they do not keep their place, and can not be made into any shape.

Are they liquids?

They are not.

How do you know they are not?

Because they do not flow down to the ground, like water.

What are such bodies as air and steam called?

They are called *Aeriform* fluids.

What is the meaning of AERIFORM?

Air-form.

Why is steam called aeriform?

Because it is like air.

Can you tell the difference between liquids and aeriform fluids?

Liquids only move in one direction, that is, downward, from a higher to a lower place.

How do fluids like air move?

They can move as easily in one direction as in another.

What fluids do we see move upward?

The fog rises up, and helps to form the clouds, and steam rises from the engine and floats away.

How is it with smoke?