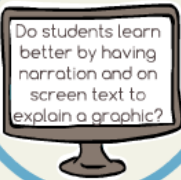


The Redundancy Principle

*When using visuals or graphics, use narration
(or on screen text), but NOT both*

The Question?

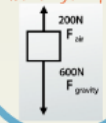


Do students learn better by having narration and on screen text to explain a graphic?

NO!



Example of how to use Redundancy Principle




The Redundancy Principle



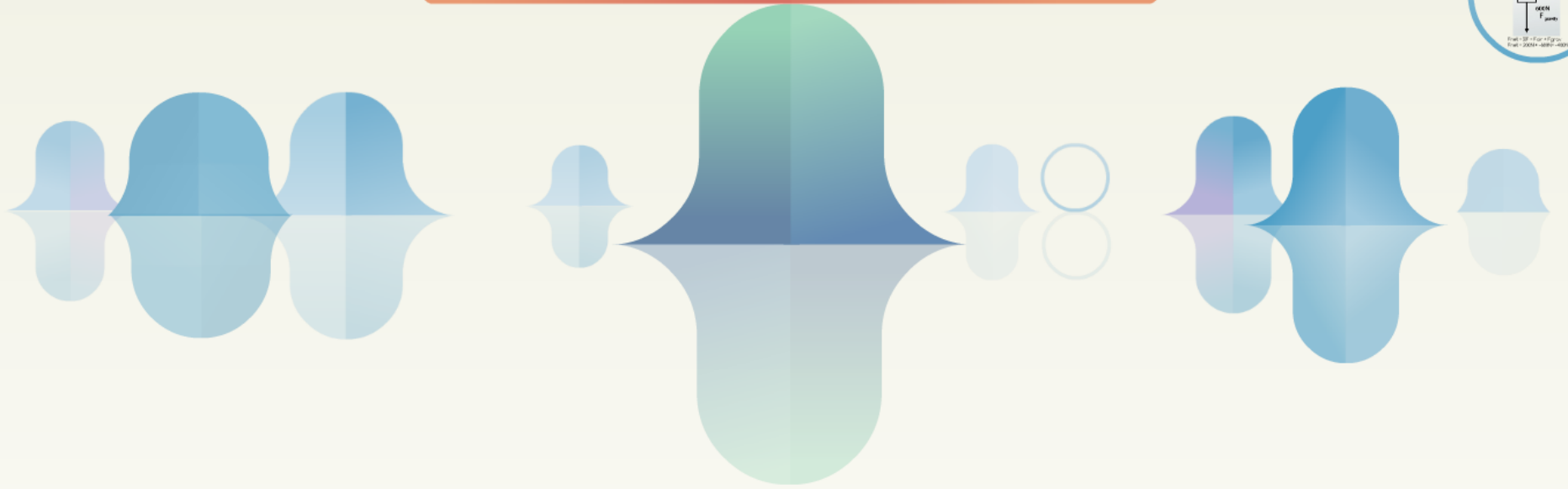
When should redundant on screen text be used?

- 1. When there is NOT an image/graphic to explain
- 2. If the learners use technical language
- 3. If the content is very technical

From The Free Body Diagrams & Teachers' Lounge (Lowe) for learner to include the caption for the free force



From: *101 Free Body Diagrams*
From: *101 Free Body Diagrams*
From: *101 Free Body Diagrams*



The Redundancy Principle

*When using visuals or graphics, use narration
(or on screen text), but NOT both*

The Question?

Do students learn better by having narration and on screen text to explain a graphic?

NO!

Example of how to use Redundancy Principle

200N
 F_{air}
600N
 $F_{gravity}$

on-screen text

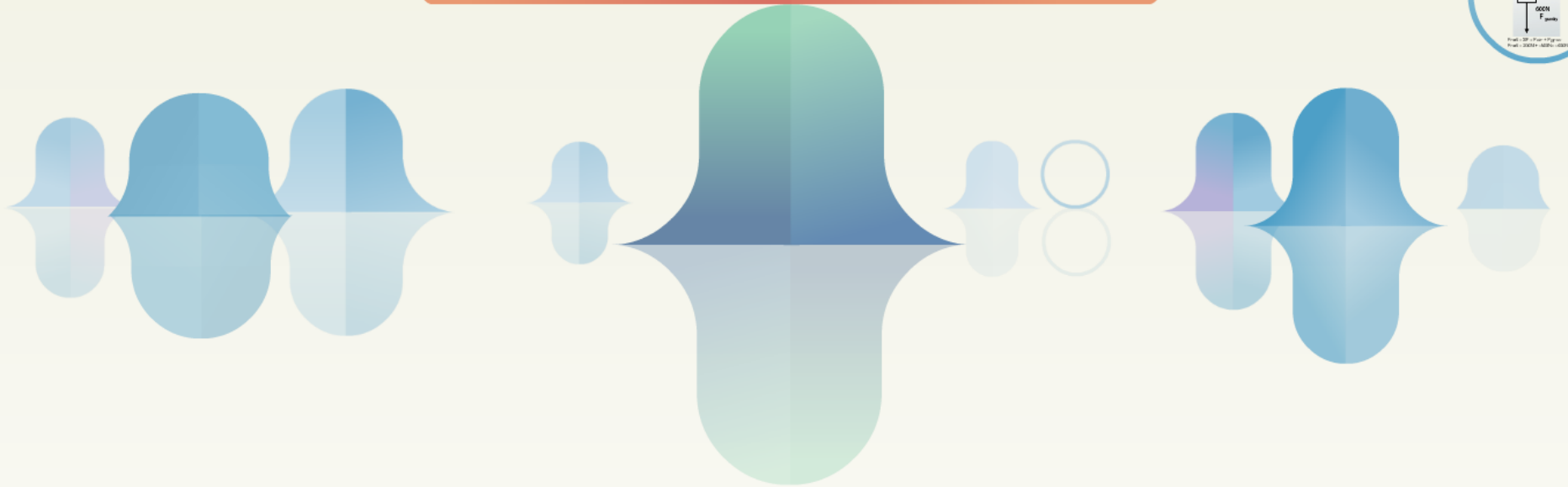
200N
600N

When should redundant on screen text be used?

- 1. When there is NOT an infographic to explain
- 2. If the learners are non-visual learners
- 3. If the content is very technical

Since the Free Body Diagram is technical, I might forward the learner to include the equation for Net Force

200N
 F_{air}
600N
 $F_{gravity}$



The Question?

Do students learn better by having narration and on screen text to explain a graphic?

NO!



The Redundancy Principle

*When using visuals or graphics, use narration
(or on screen text), but NOT both*

The Question?

Do students learn better by having narration and on screen text to explain a graphic?

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Example of how to use Redundancy Principle

200N
 F_{air}
600N
 $F_{gravity}$

on-screen text

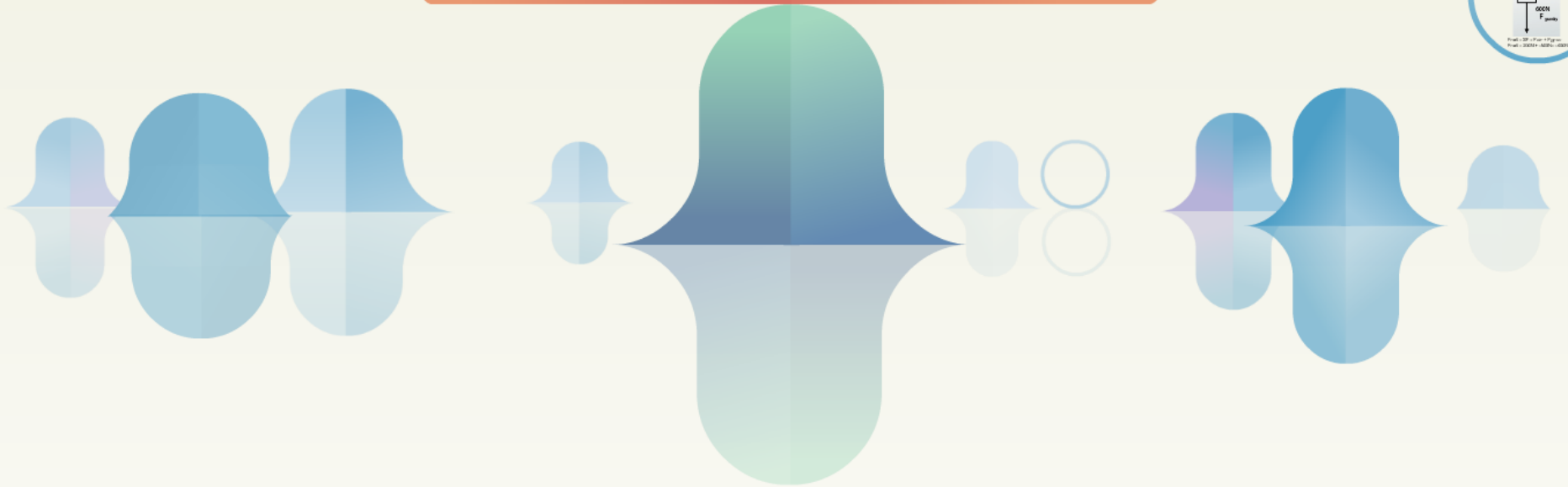
200N
600N

When should redundant on screen text be used?

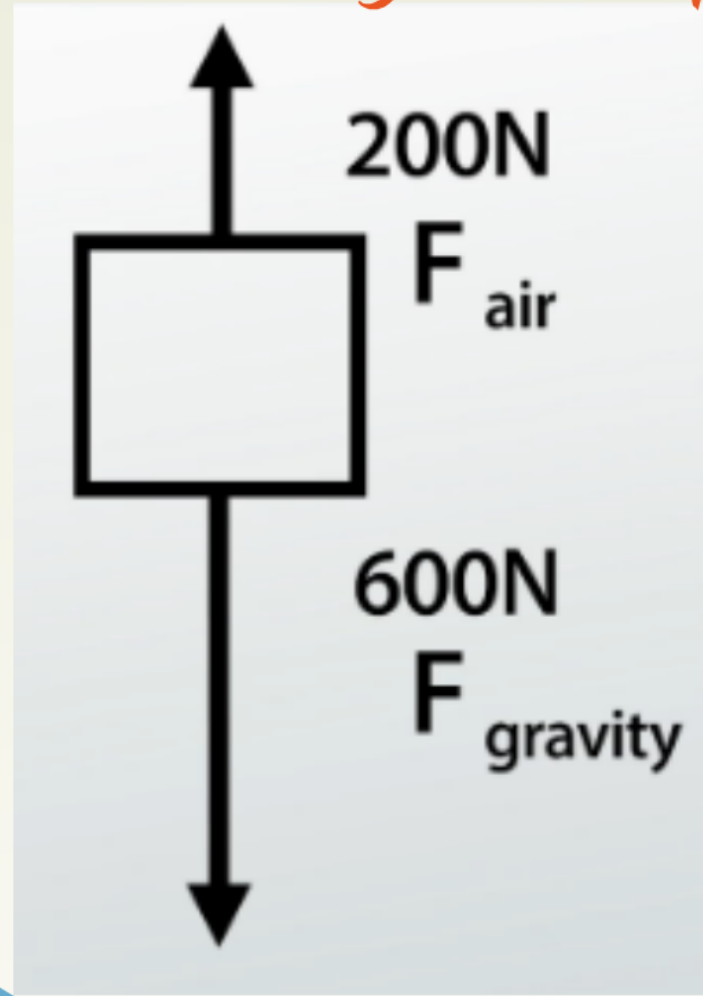
- 1. When there is NOT an infographic to explain
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Since the Free Body Diagram is technical, I might forward the learner to include the equation for Net Force

200N
 F_{air}
600N
 $F_{gravity}$



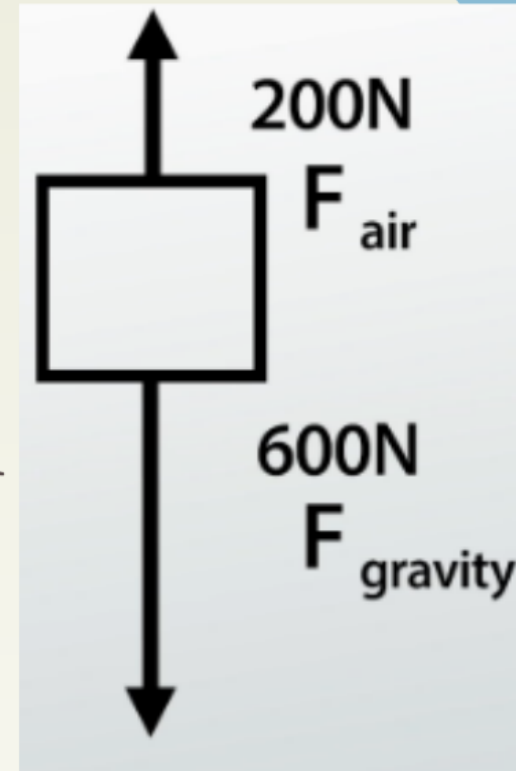
*Example of how to use
Redundancy Principle*



Poor Redundancy Example

In this Free Body there are two forces acting on the object. The force of gravity or weight is 600 Newtons in the down direction, and air resistance is 200 Newtons in the up direction.

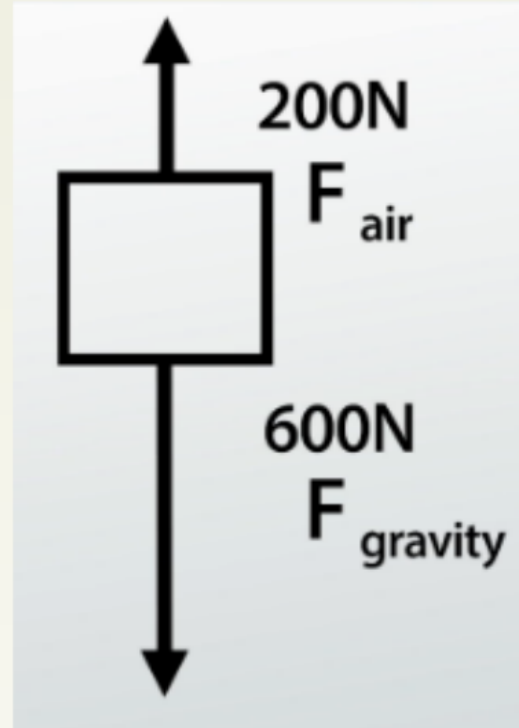
The net Force is the vector sum of all the forces acting on the object or $F_{\text{net}} = 200 \text{ Newtons up} + 600 \text{ Newtons down} = 400 \text{ Newtons down}$ or -400 Newtons .



When should redundant on screen text be used?

1. When there is NOT an image/graphic to explain
2. If the learners are non-native speakers
3. If the content is very technical

Since the Free Body Diagram is "technical", it might benefit the learner to include the equation for the net force.



$$F_{\text{net}} = \Sigma F = F_{\text{air}} + F_{\text{grav}}$$
$$F_{\text{net}} = 200\text{N} + -600\text{N} = -400\text{N}$$

The Redundancy Principle

*When using visuals or graphics, use narration
(or on screen text), but NOT both*

The Question?

Do students learn better by having narration and on screen text to explain a graphic?

NO!

Example of how to use Redundancy Principle

200N
 F_{air}
600N
 $F_{gravity}$

On-Monitor Text

200N
 F_{air}
600N
 $F_{gravity}$

When should redundant on screen text be used?

- 1. When there is NOT an infographic to explain
- 2. If the learners are non-visual learners
- 3. If the content is very technical

Since the Free Body Diagram is technical, I might benefit the learner to include the equation for Net Force

200N
 F_{air}
600N
 $F_{gravity}$

