

Photoelectric Effect

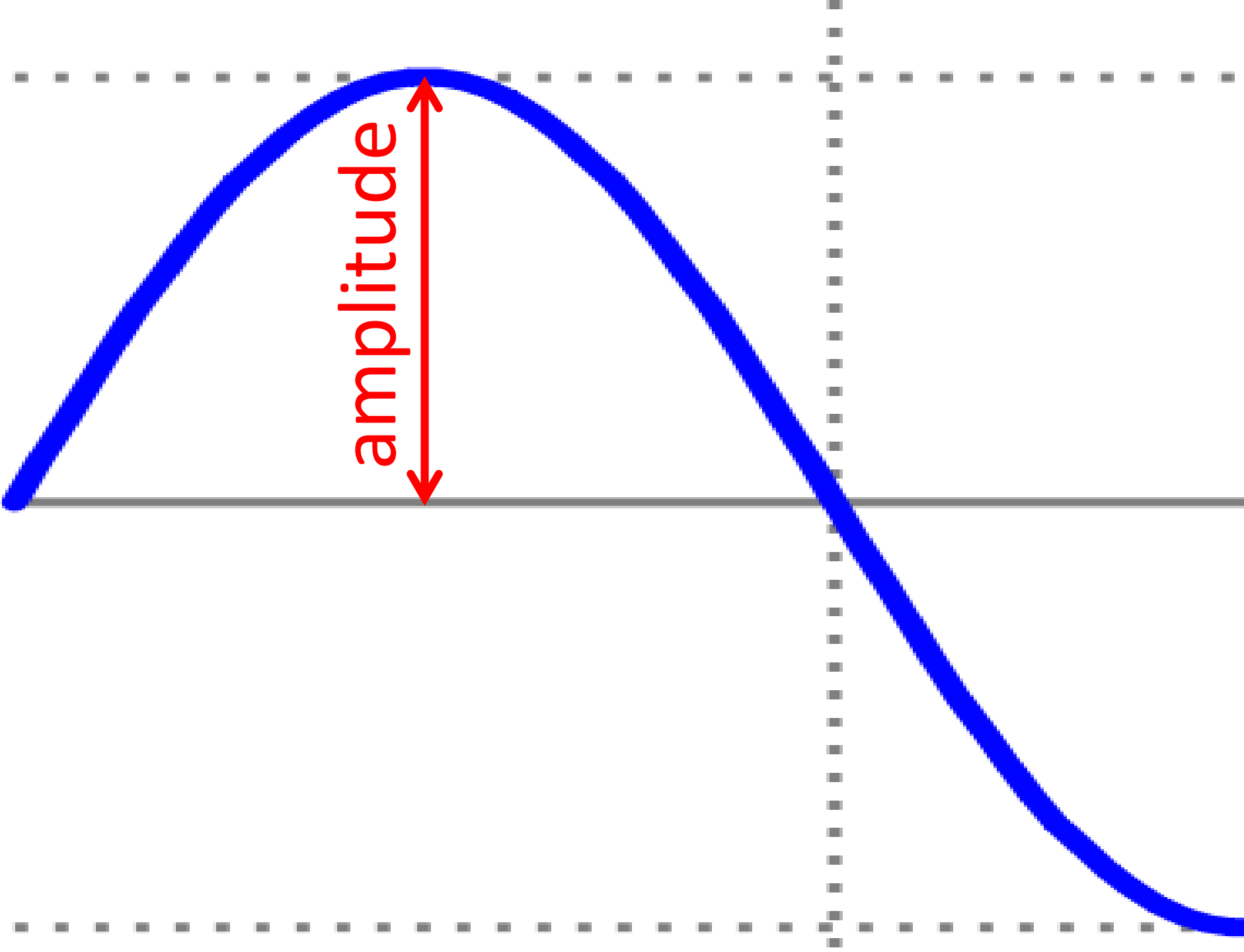
Introduction

Prediction of results

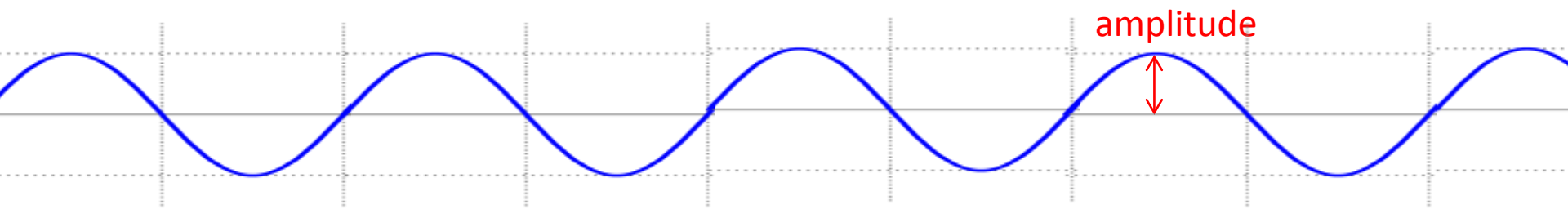
IF LIGHT IS A WAVE



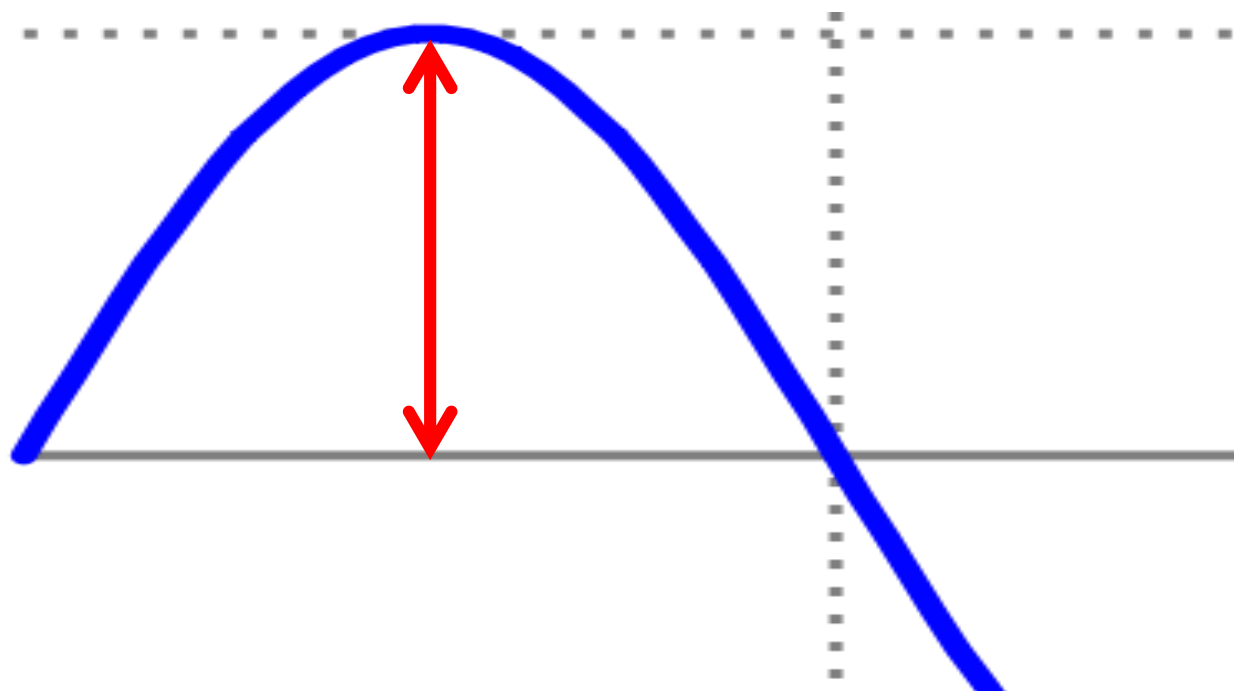
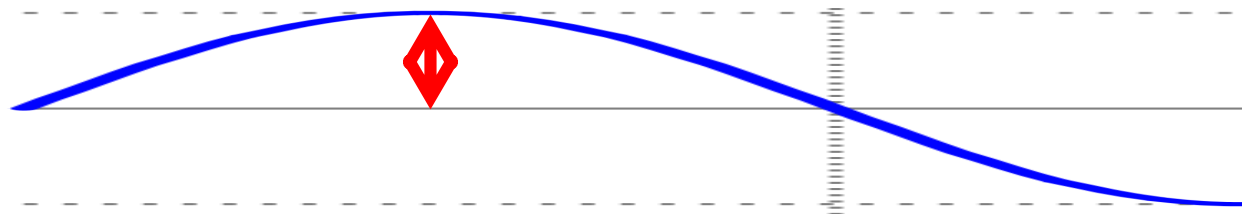


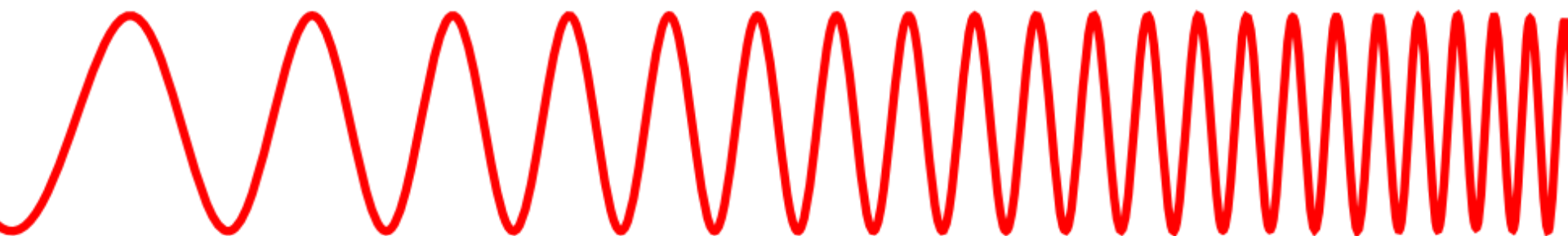








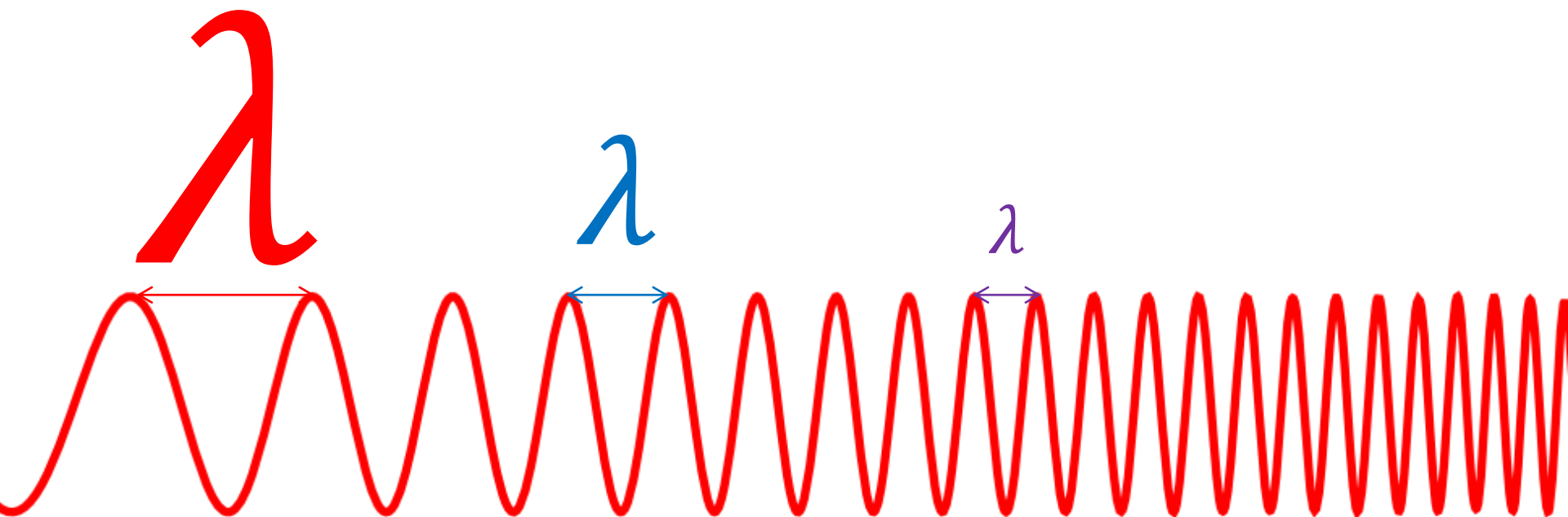




f

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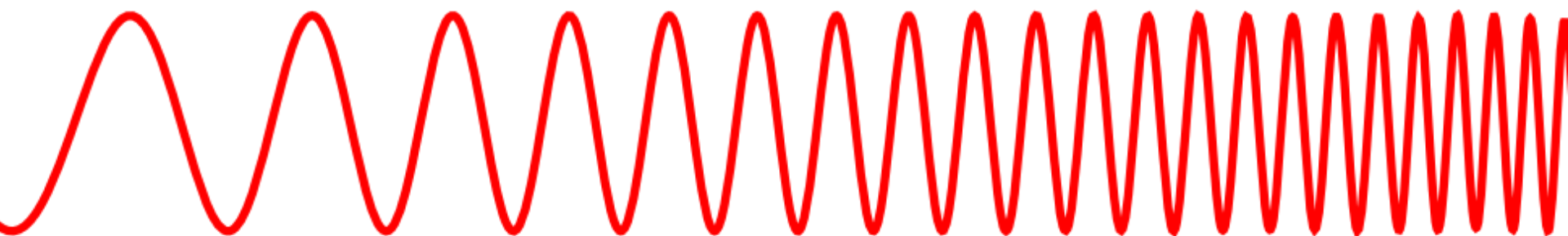
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Photoelectric effect experiment

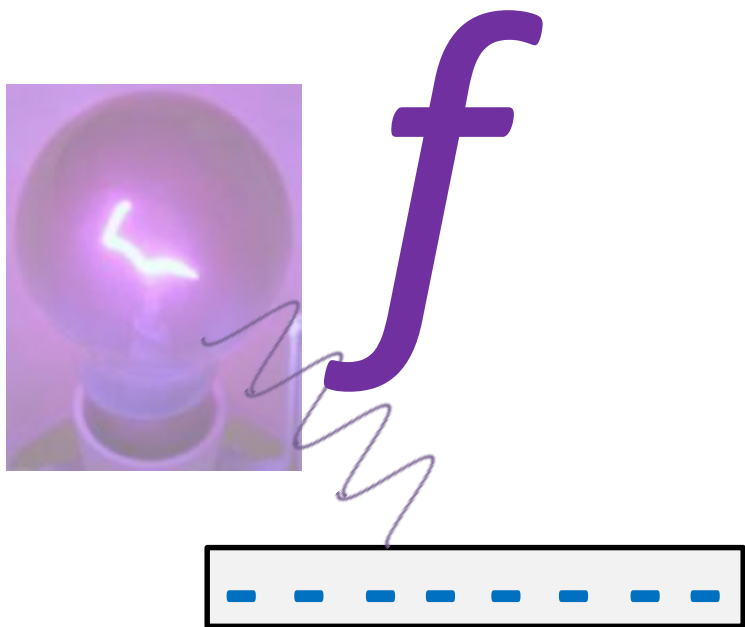
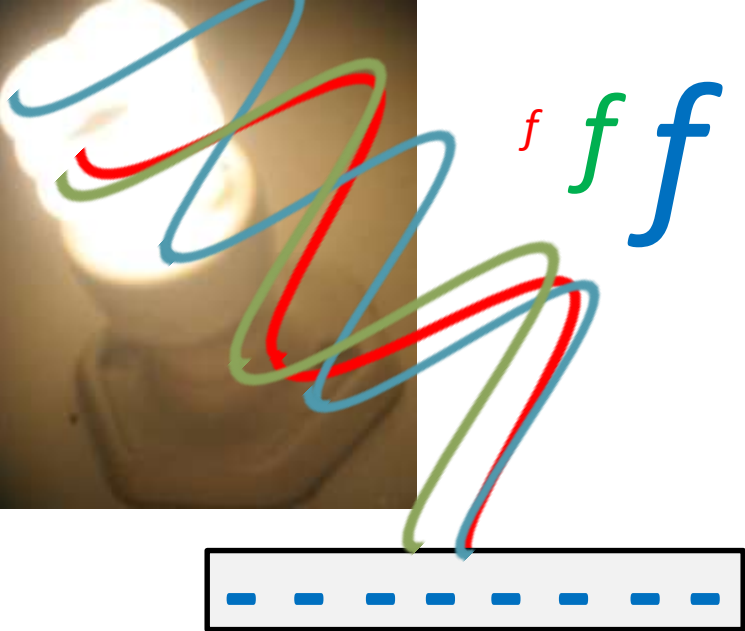
RESULTS

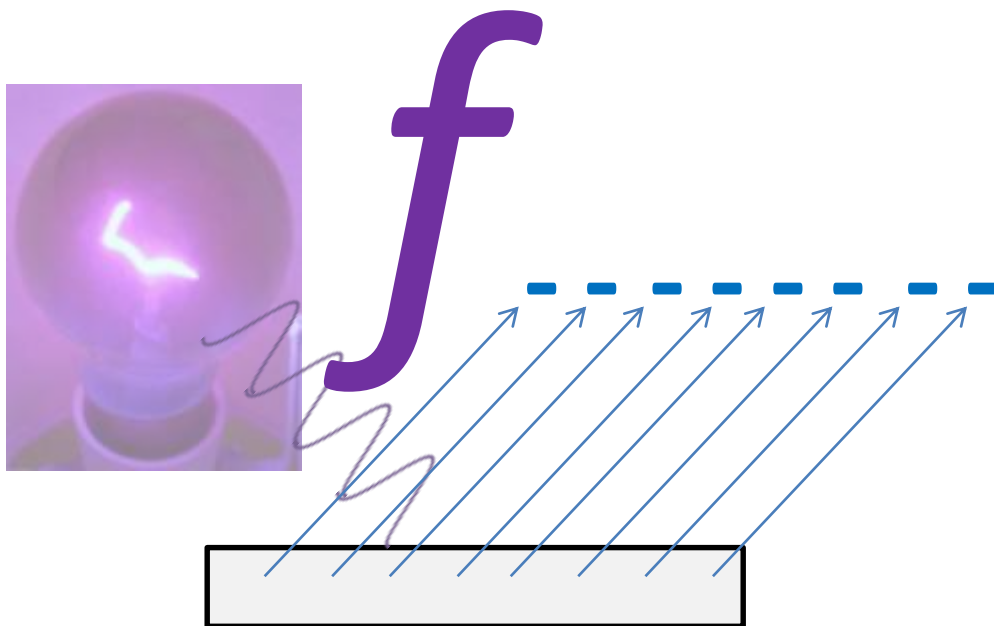
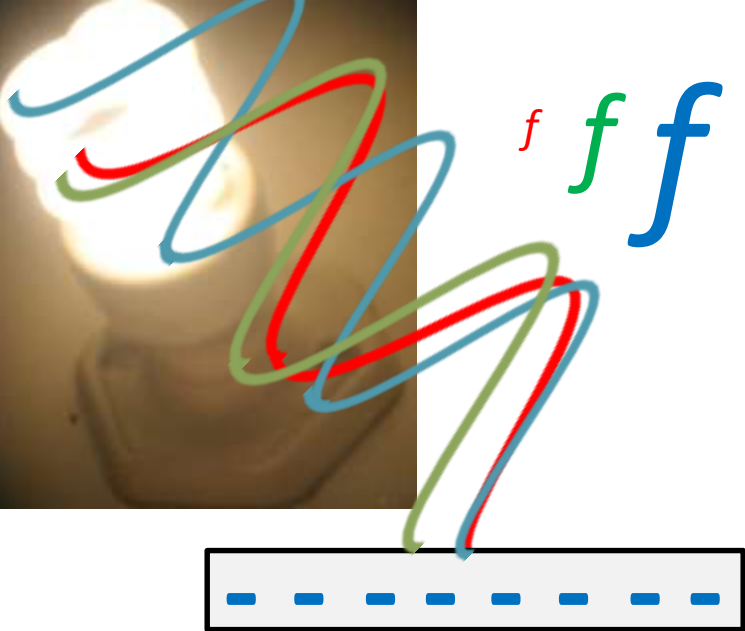


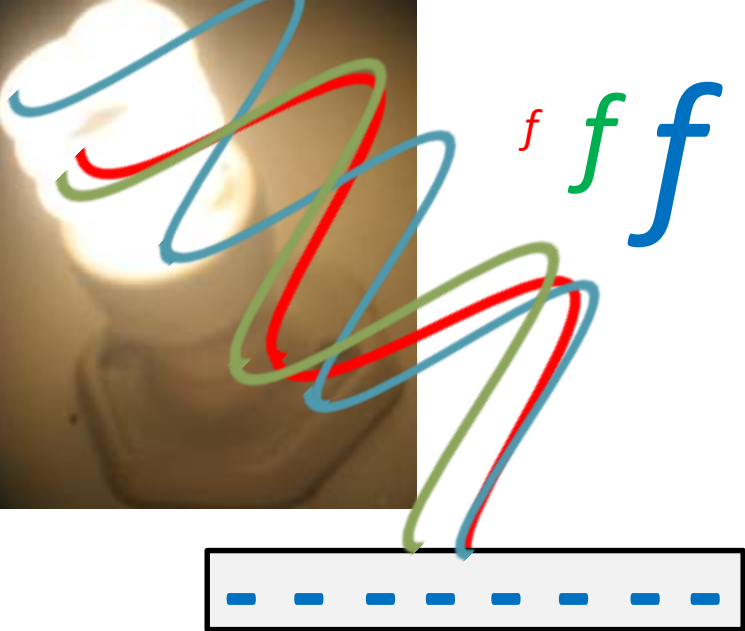
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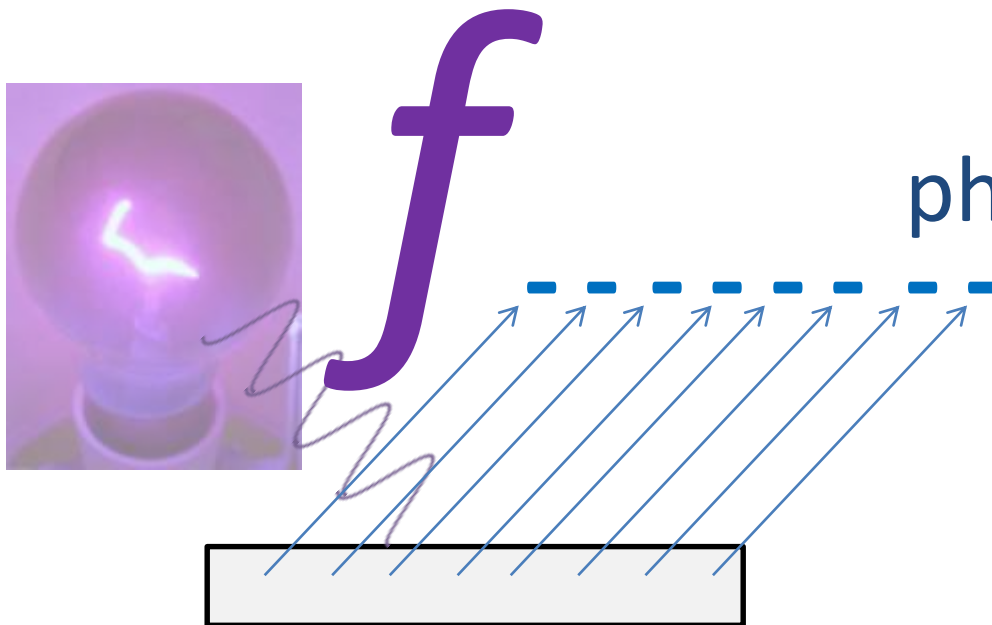
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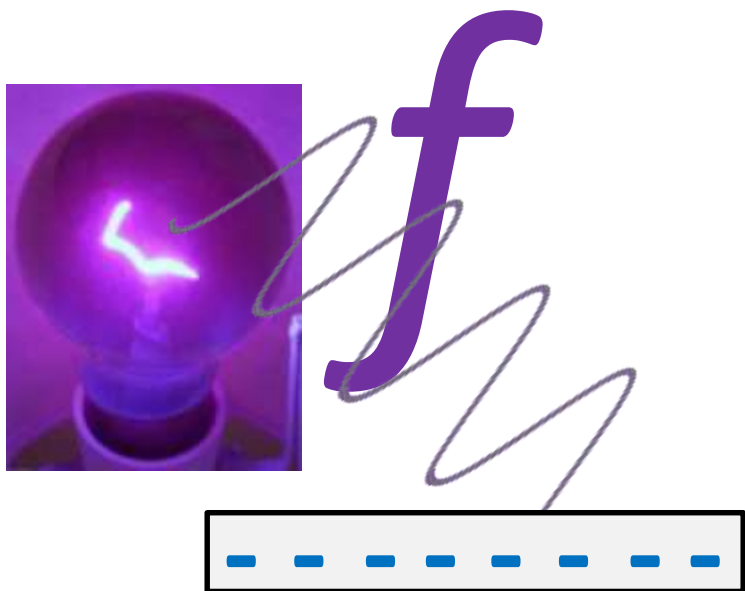
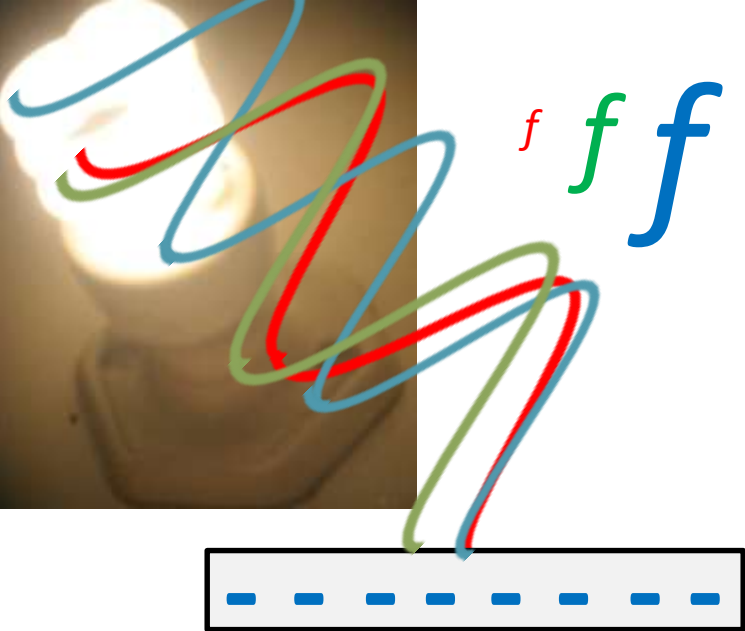


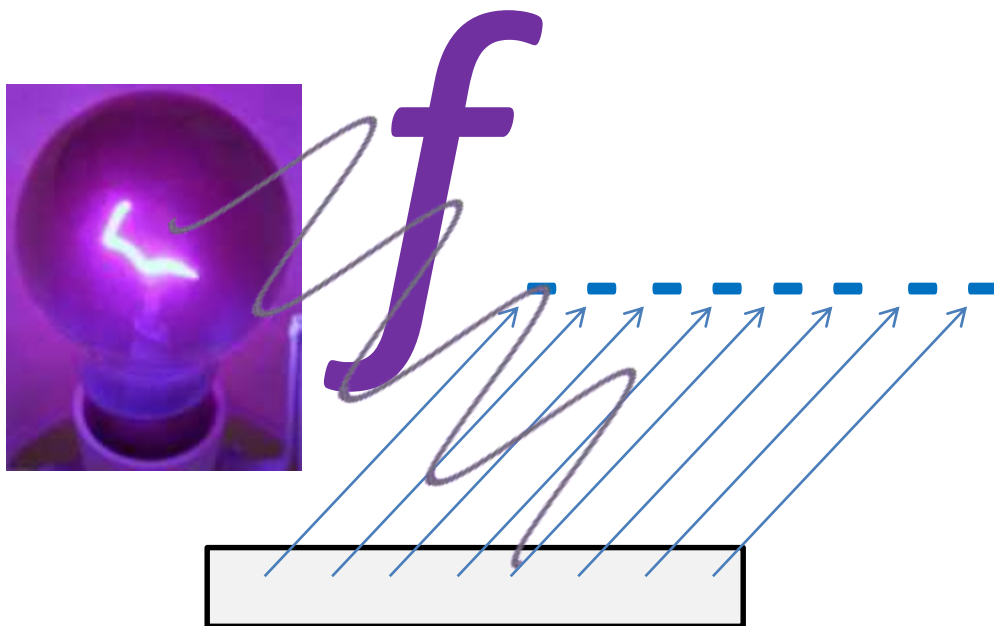
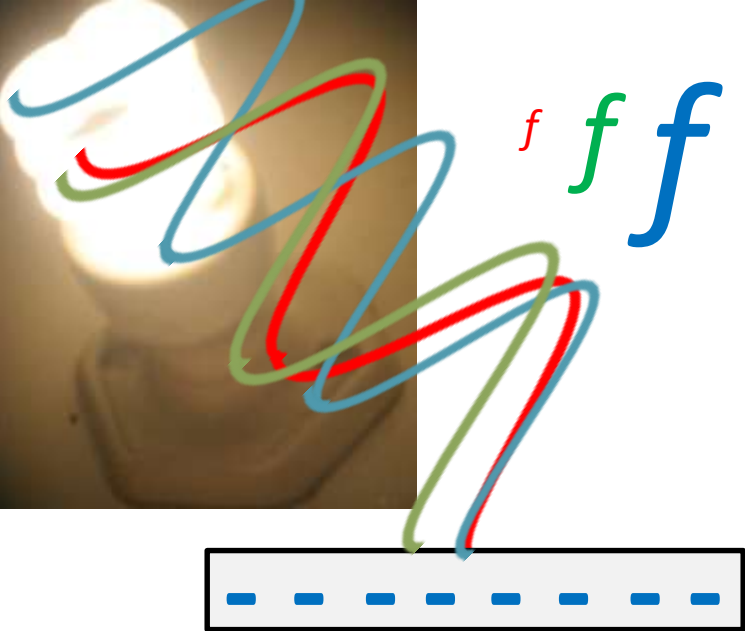


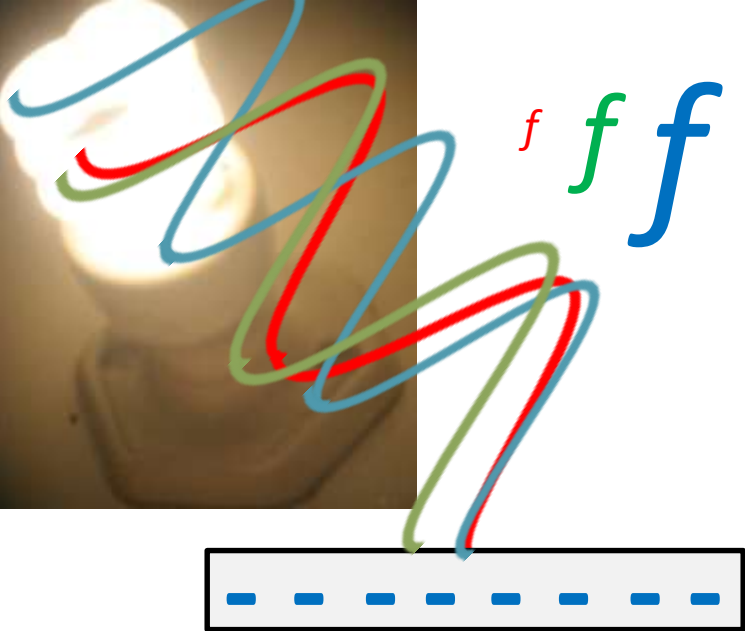
photoelectric emission **X**



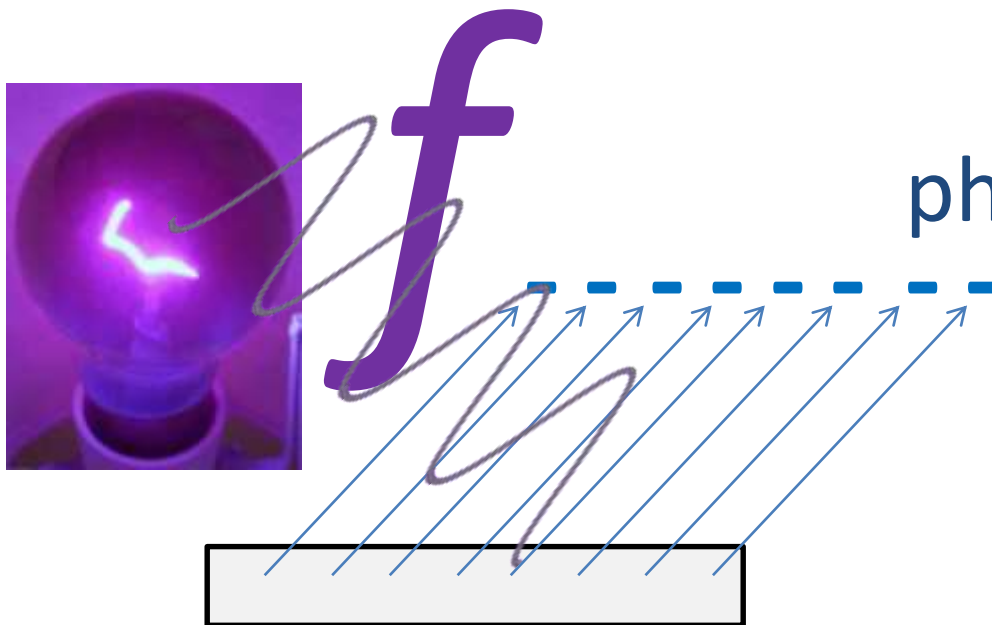
photoelectric emission **✓**







photoelectric emission 



photoelectric emission 

LIGHT

amplitude

LIGHT

has

intensity

determined by light's

amplitude



LIGHT

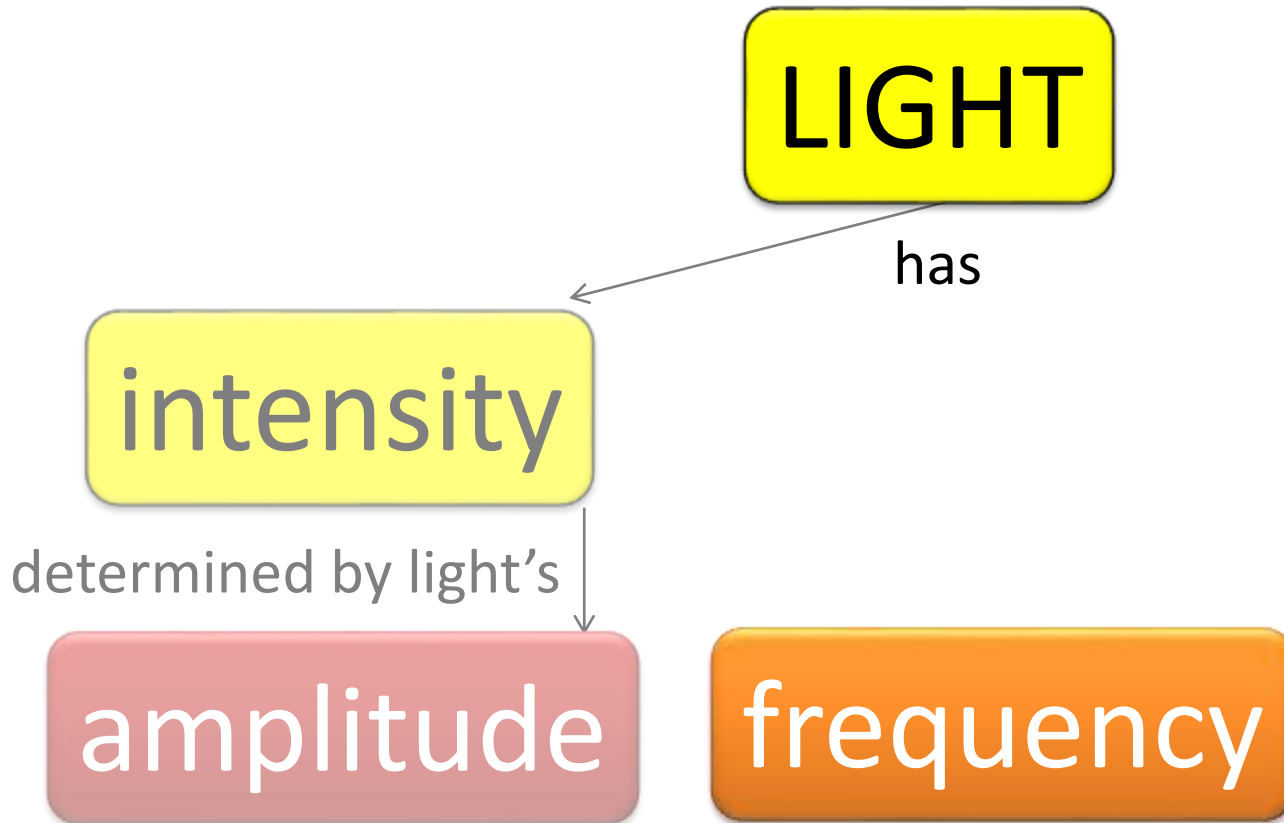
has

intensity

determined by light's

amplitude

frequency



LIGHT

has

intensity

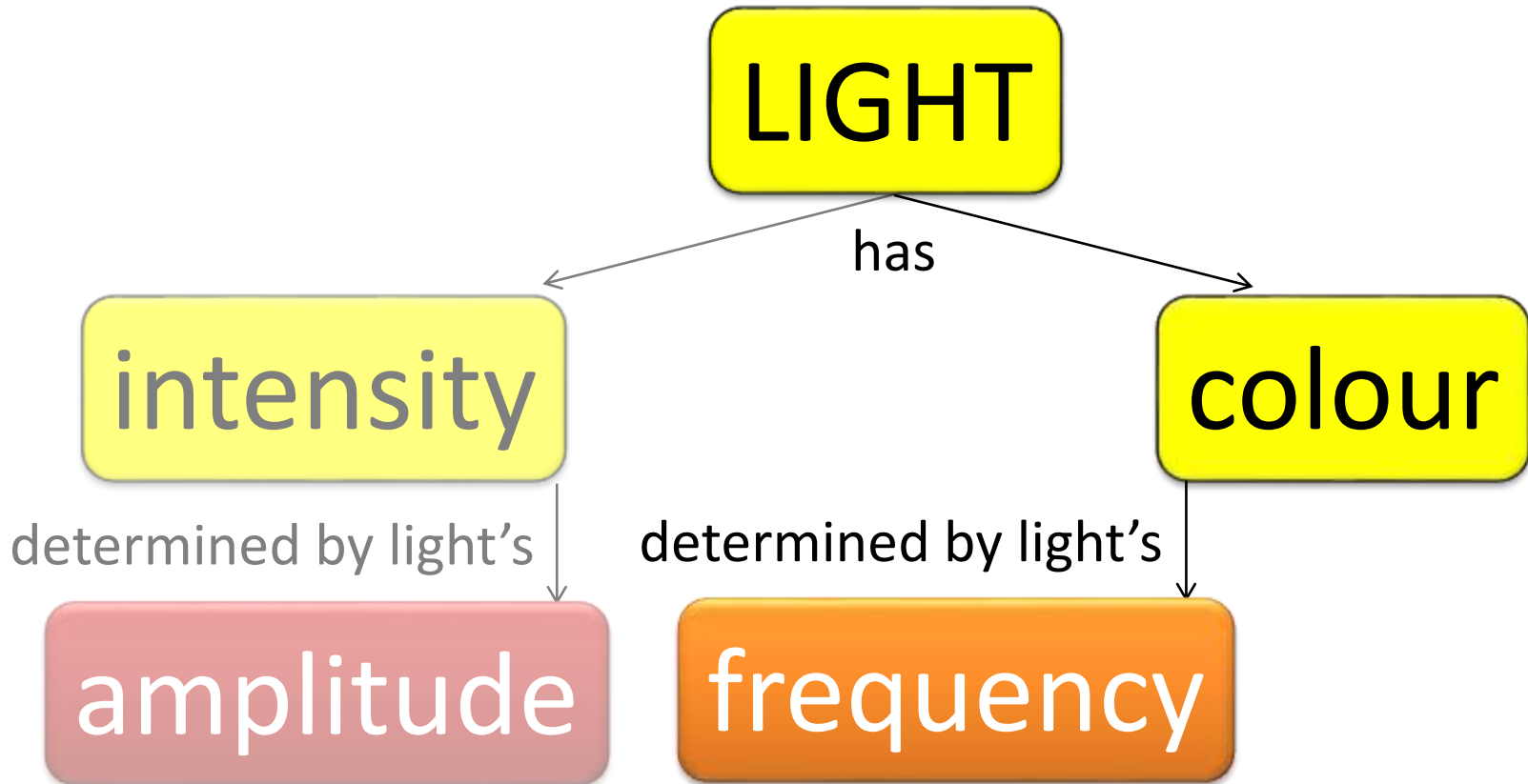
colour

determined by light's

amplitude

determined by light's

frequency



LIGHT

has

intensity

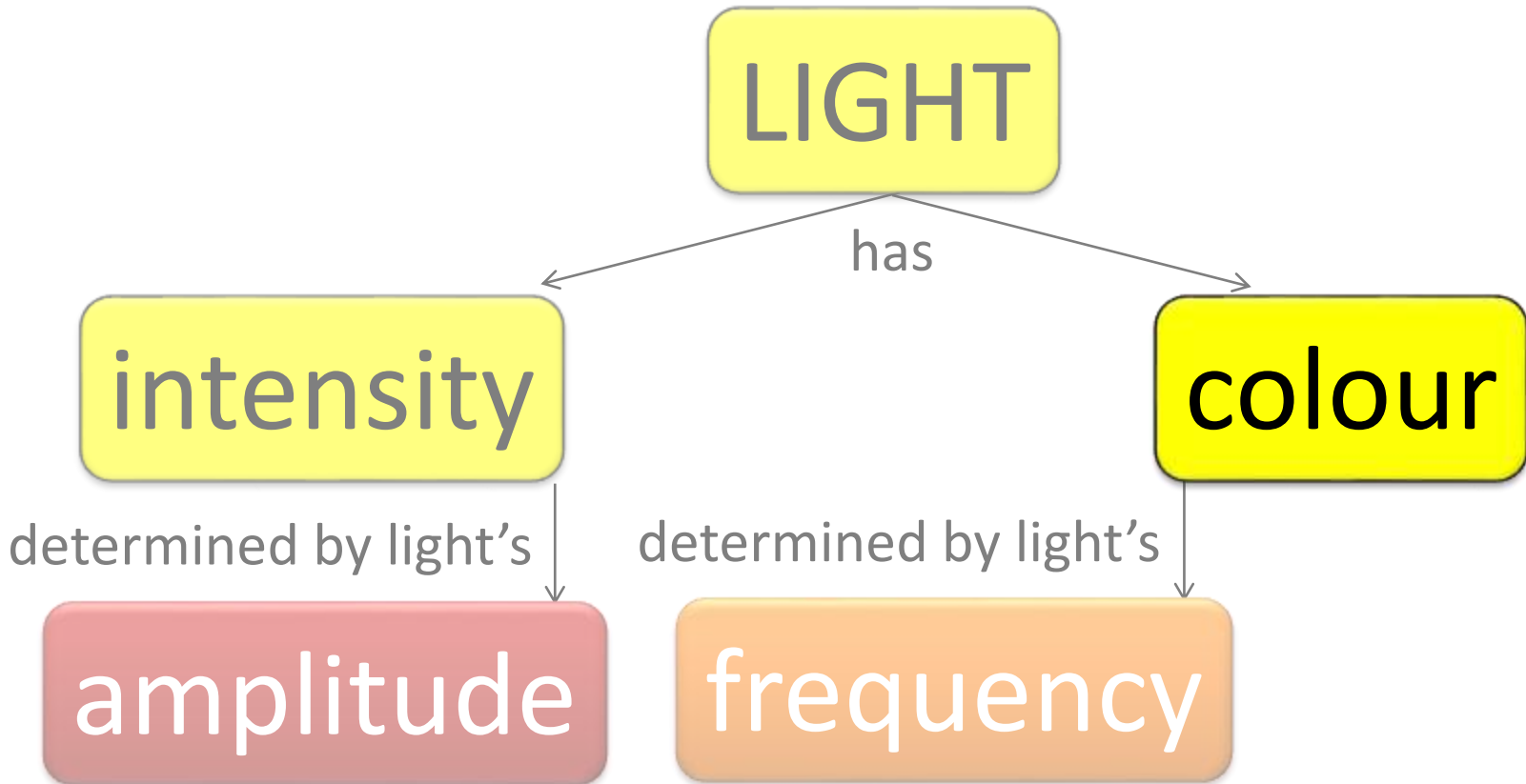
colour

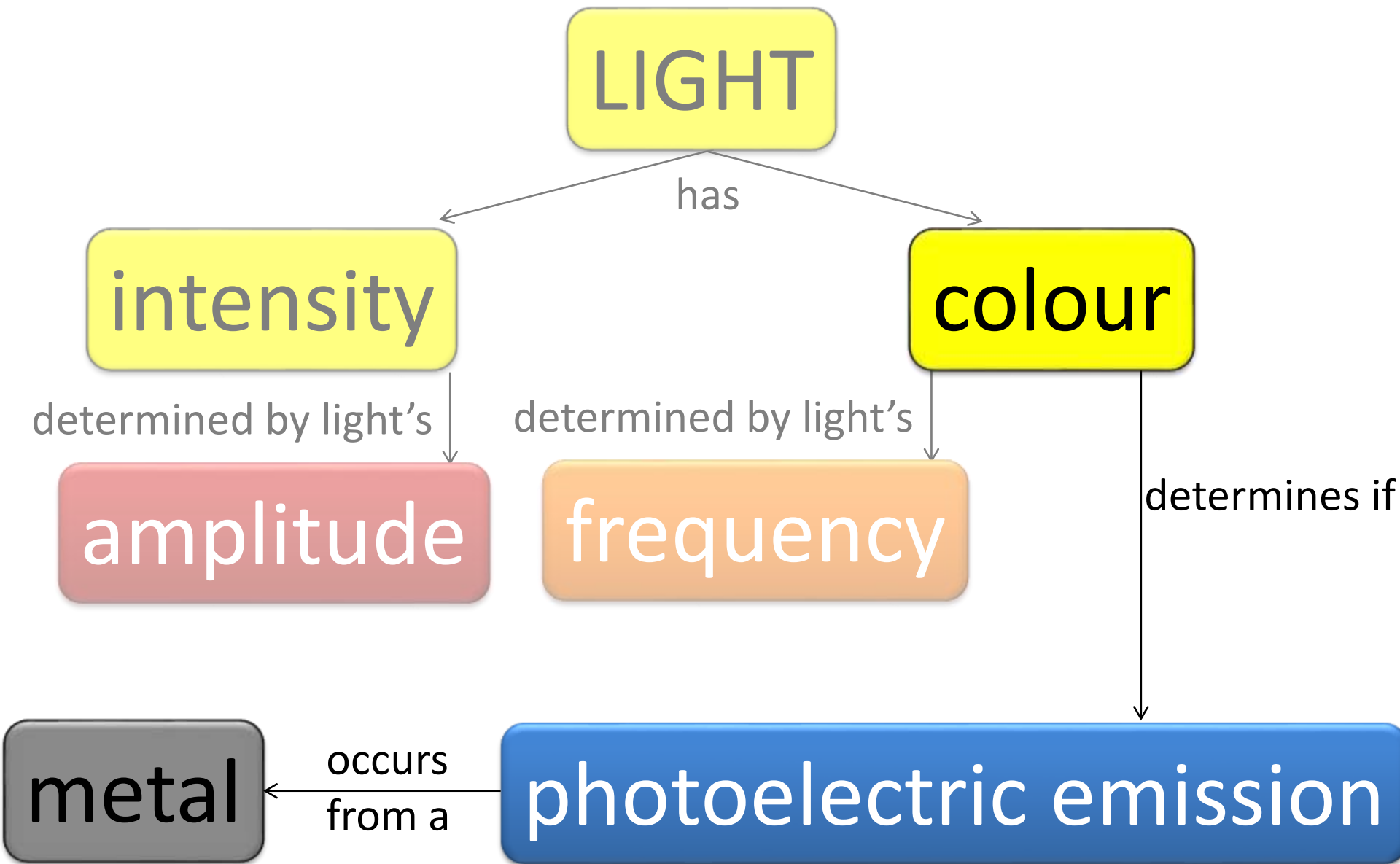
determined by light's

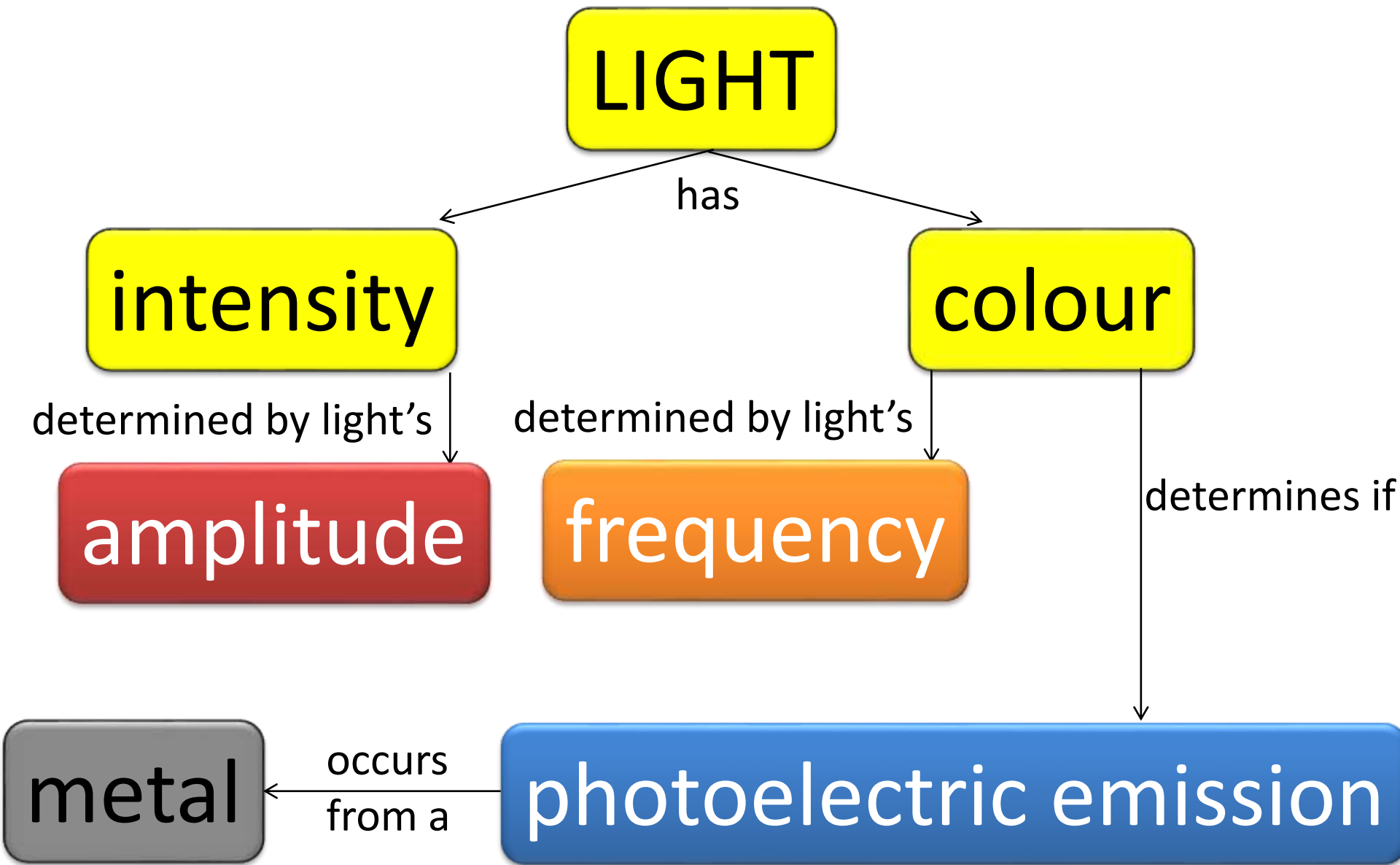
amplitude

determined by light's

frequency







Explanation of results

QUANTUM THEORY

LIGHT

consists of →

PHOTONS

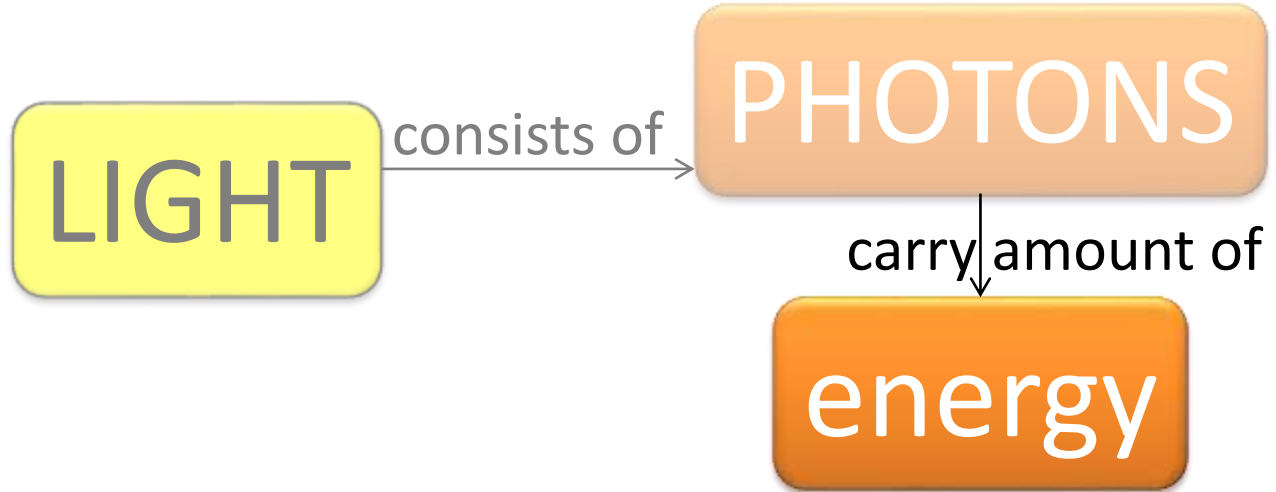
LIGHT

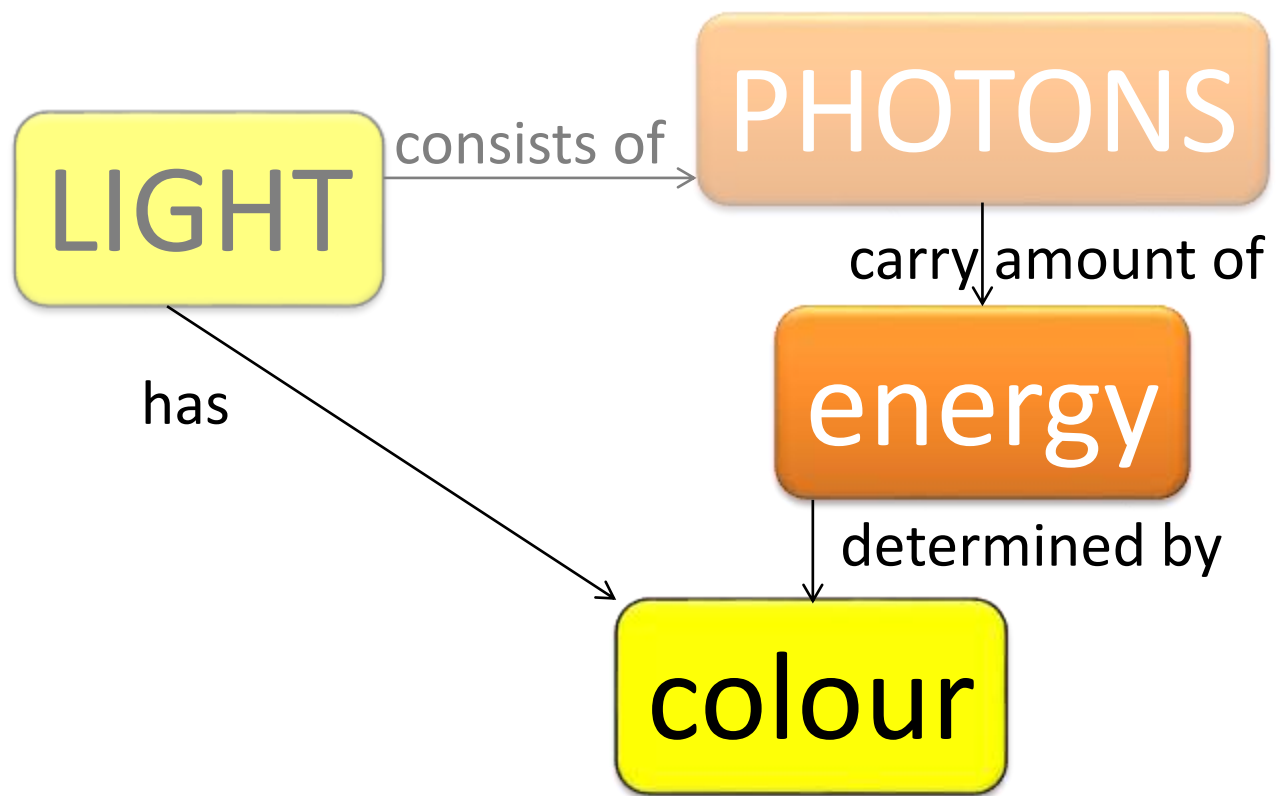
consists of

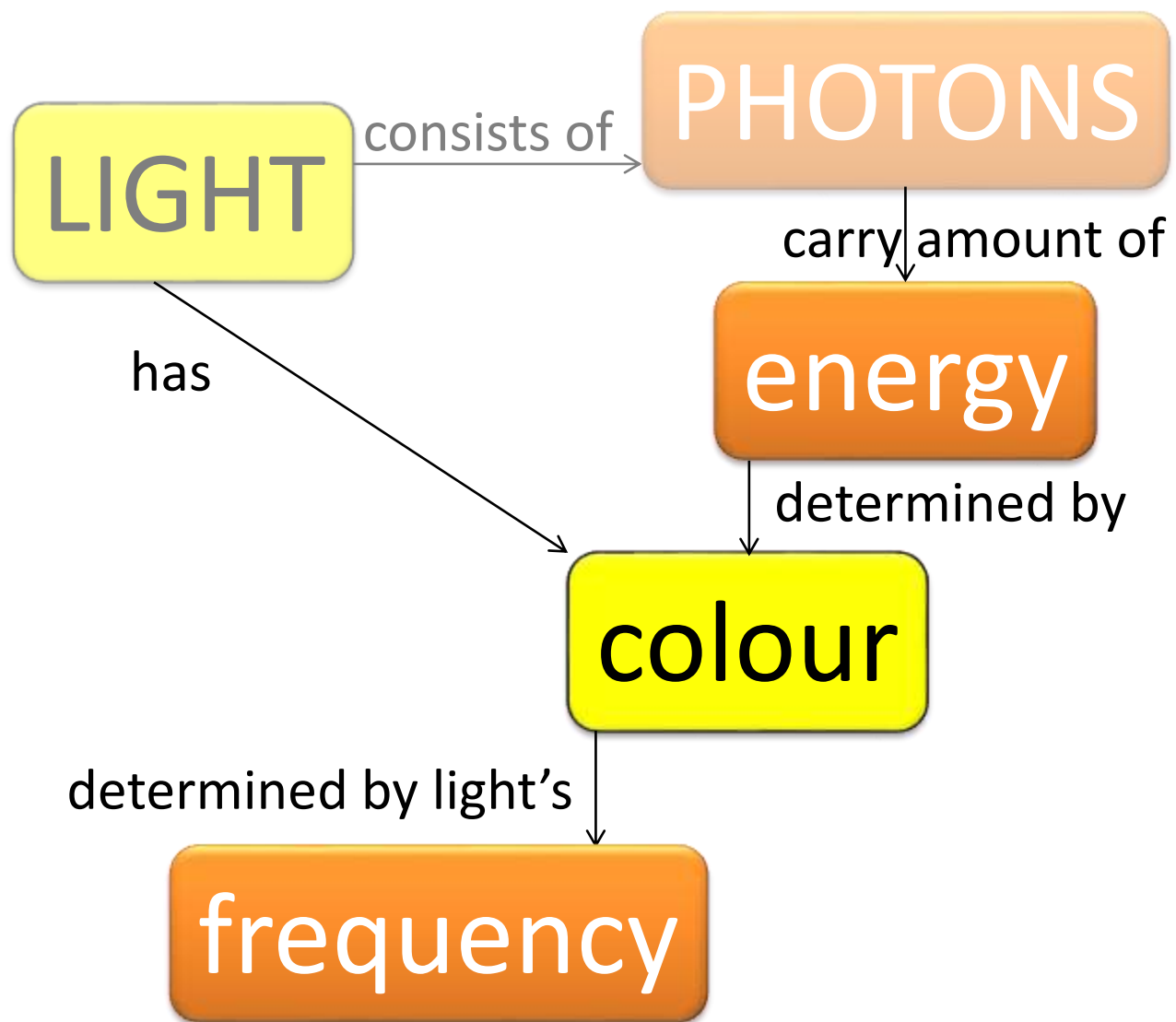
PHOTONS

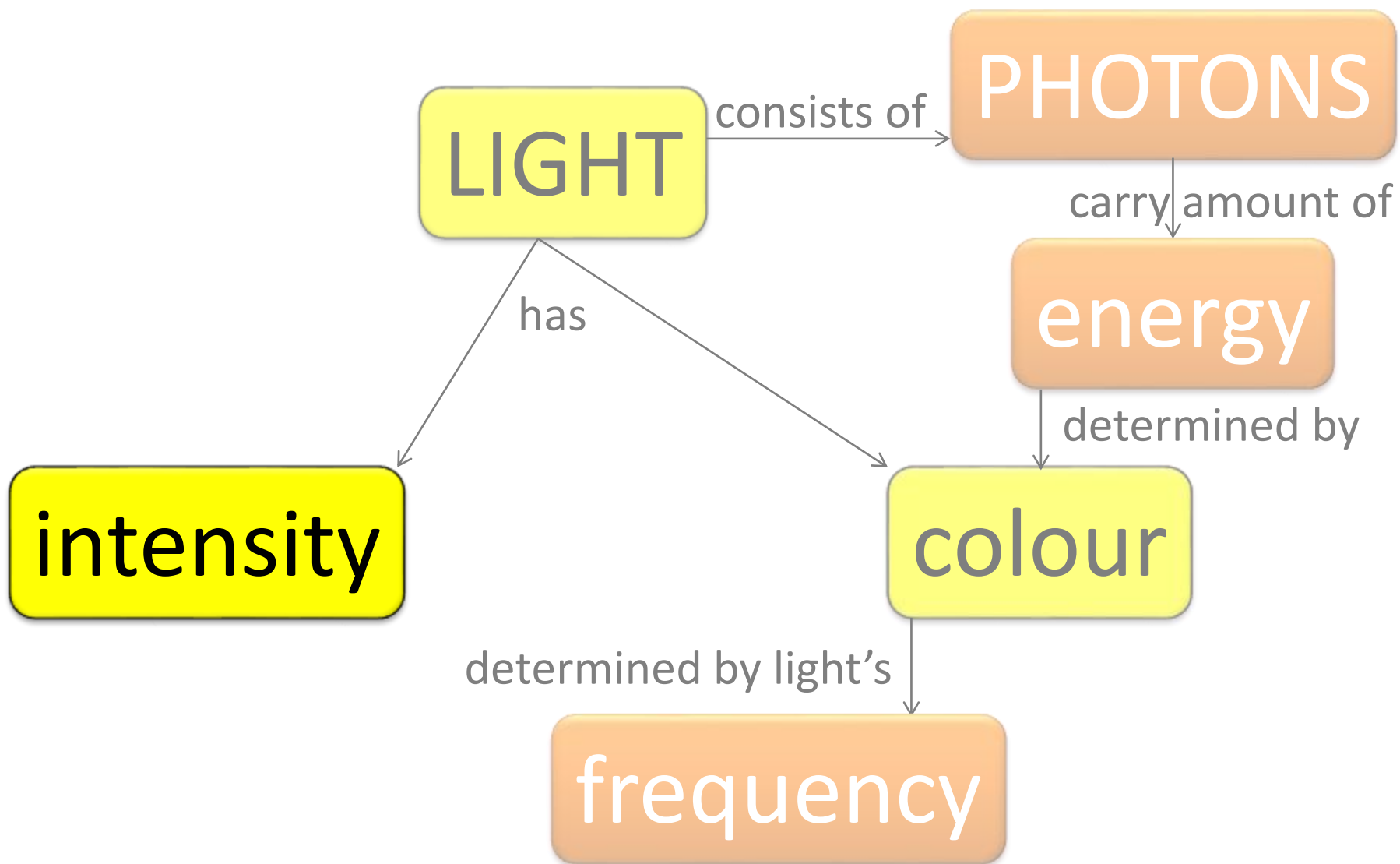
carry amount of

energy









of

LIGHT

consists of

PHOTONS

carry amount of

energy

determined by

intensity

determined by

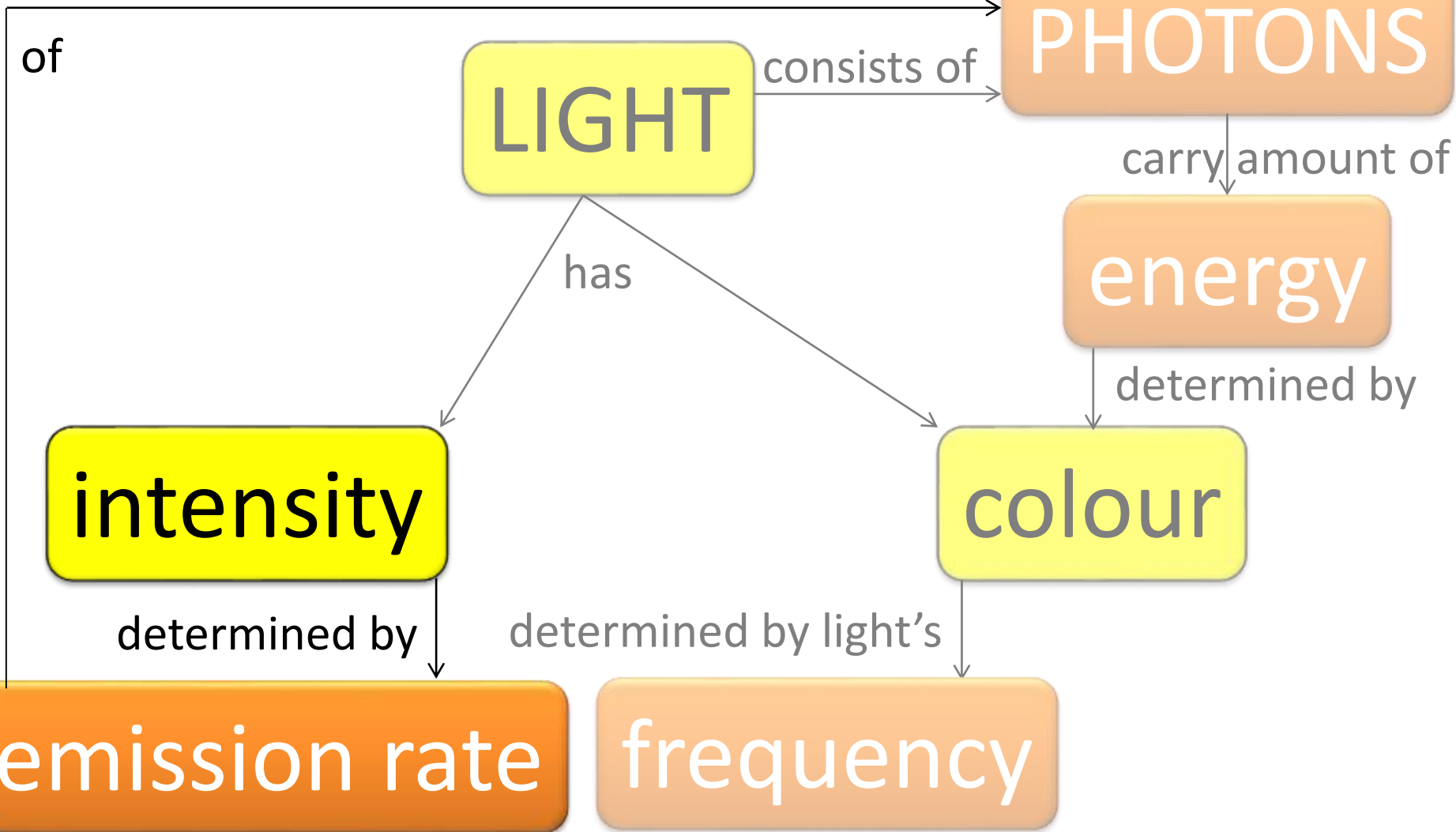
emission rate

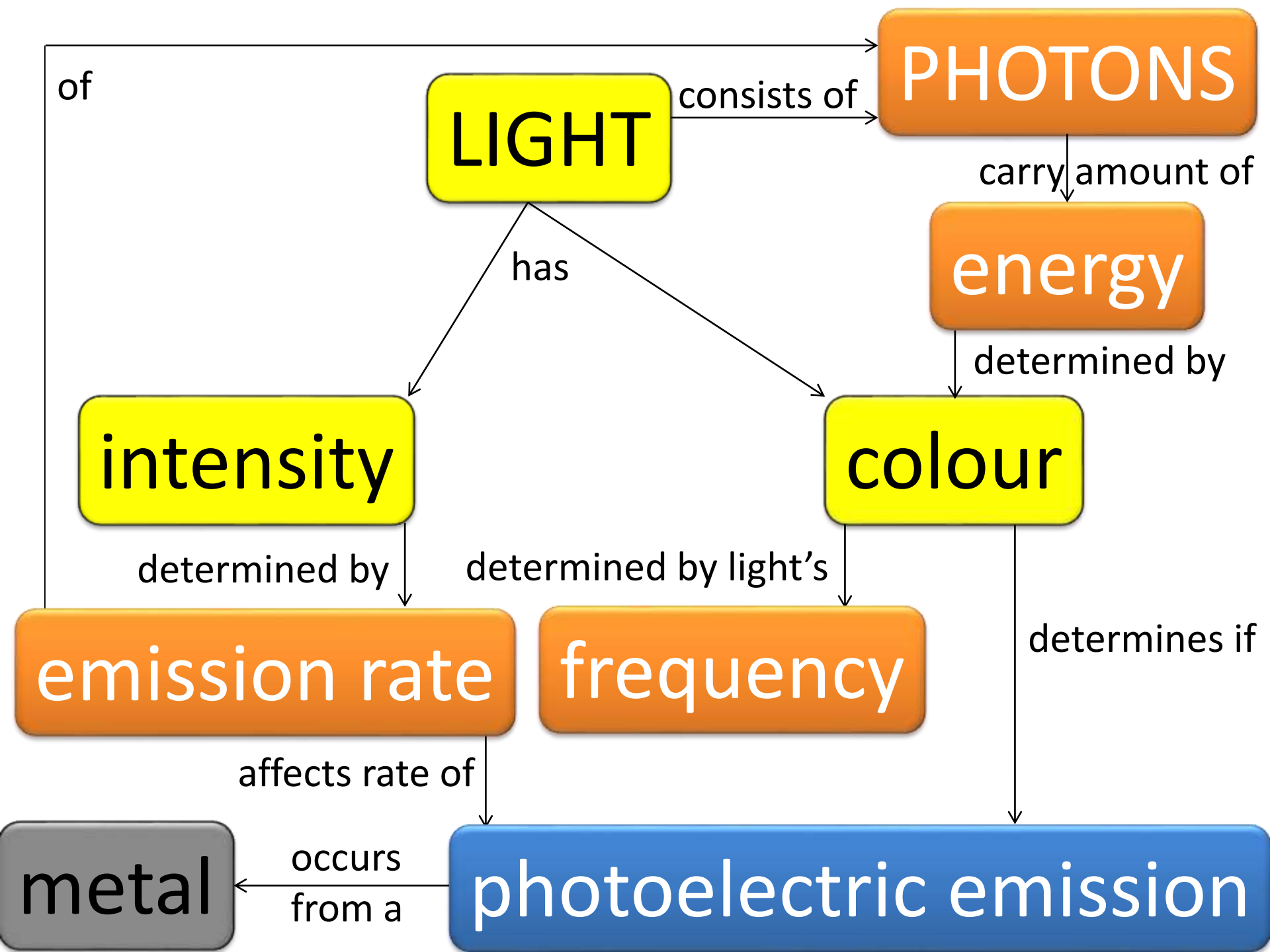
has

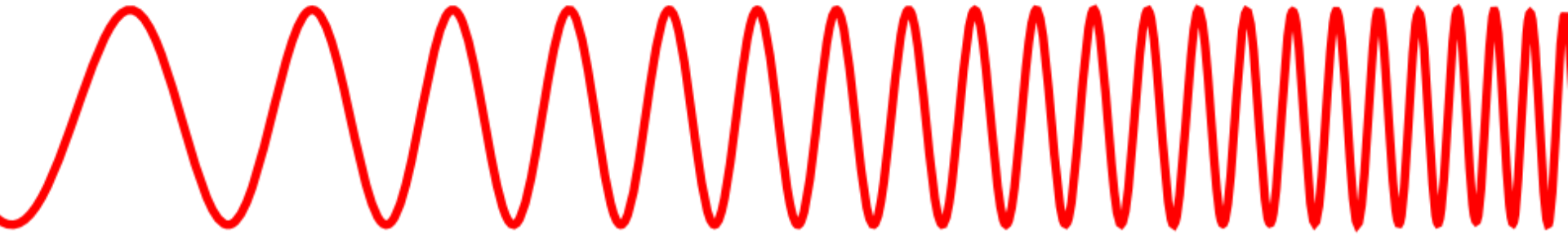
colour

determined by light's

frequency



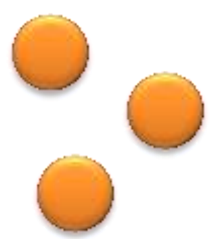




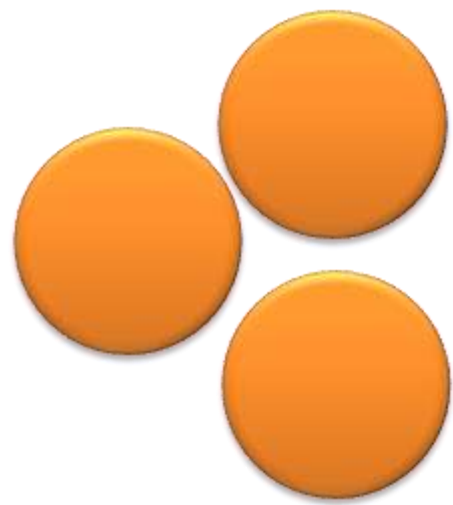
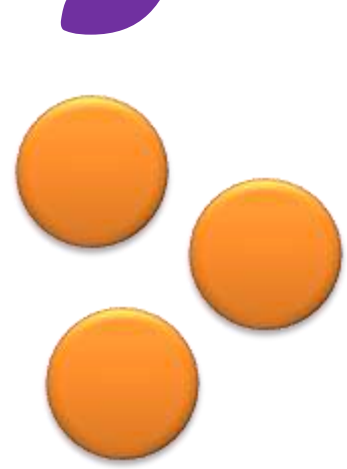
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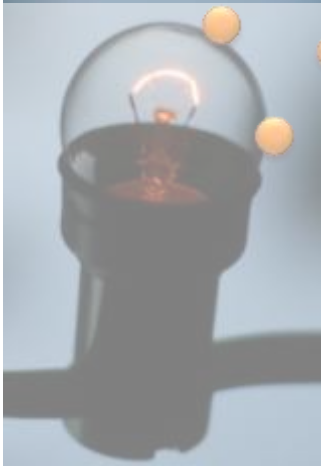
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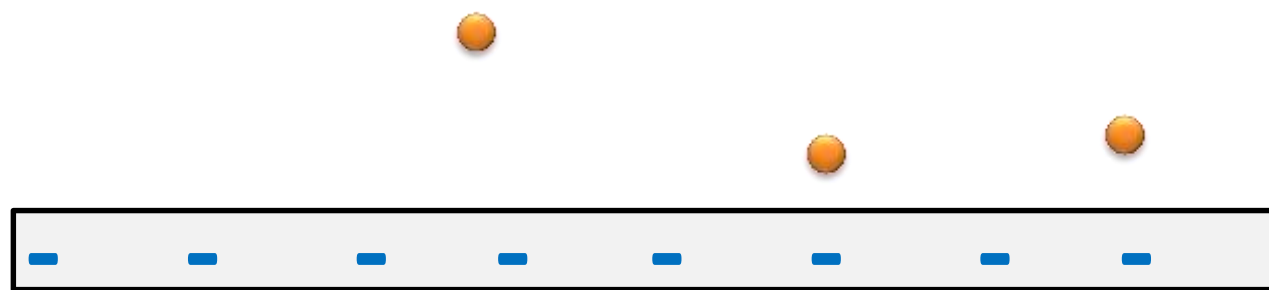


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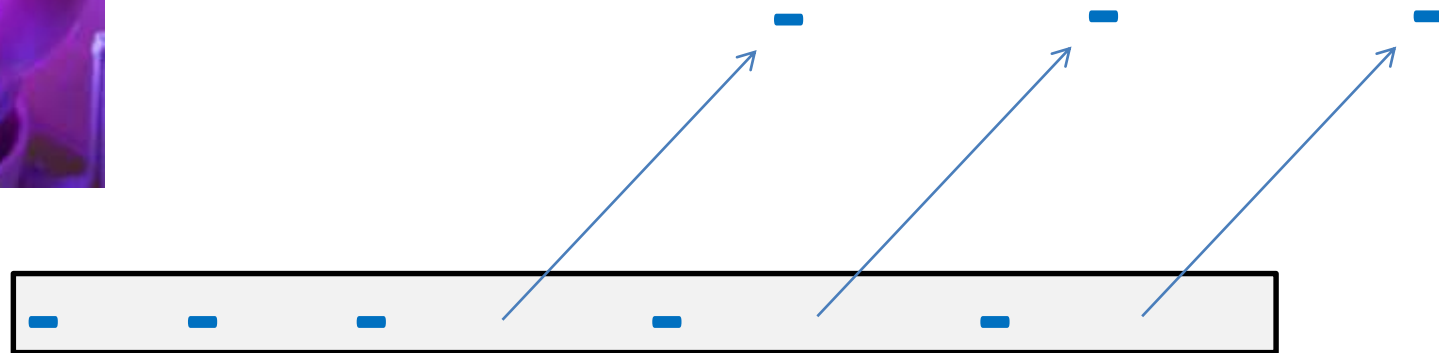


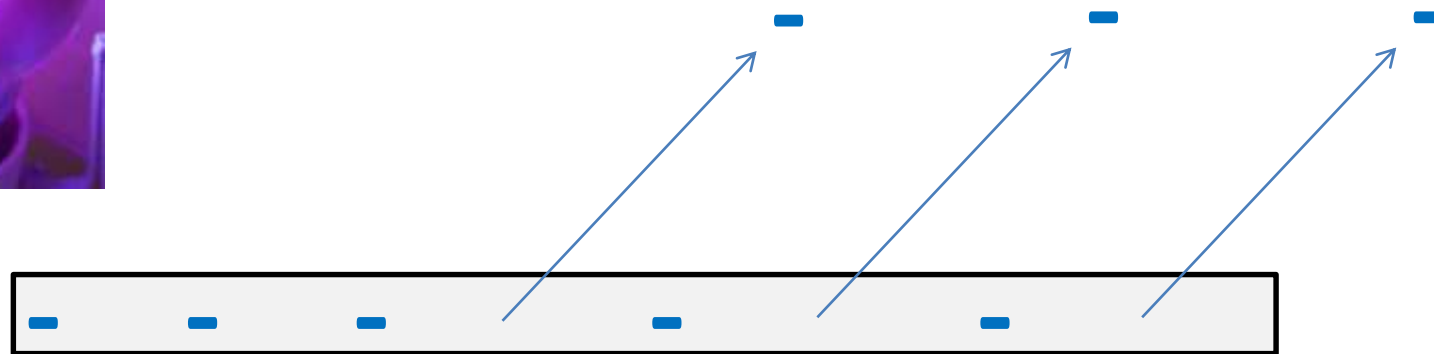






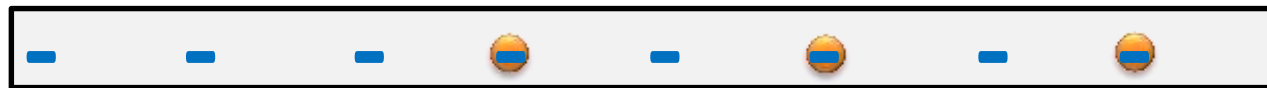






photoelectric emission







photoelectric emission **X**







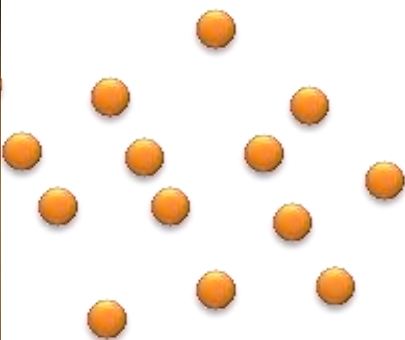
photoelectric emission X



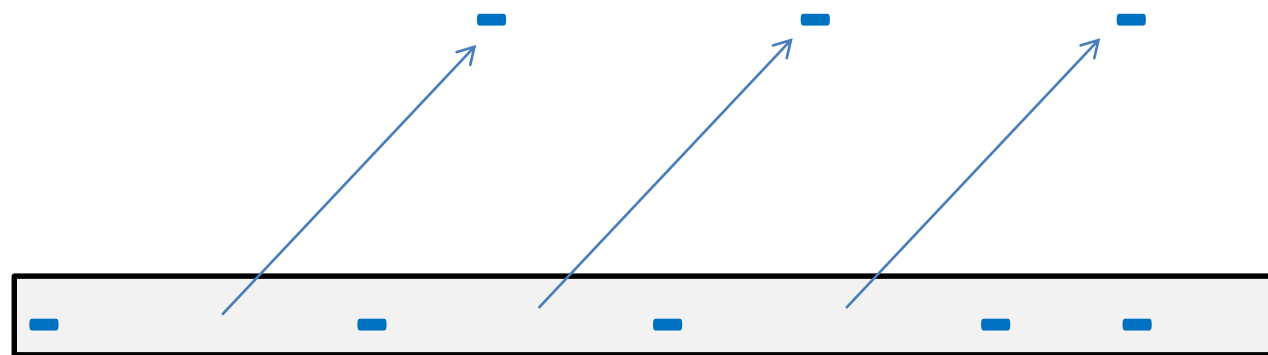
photoelectric emission X









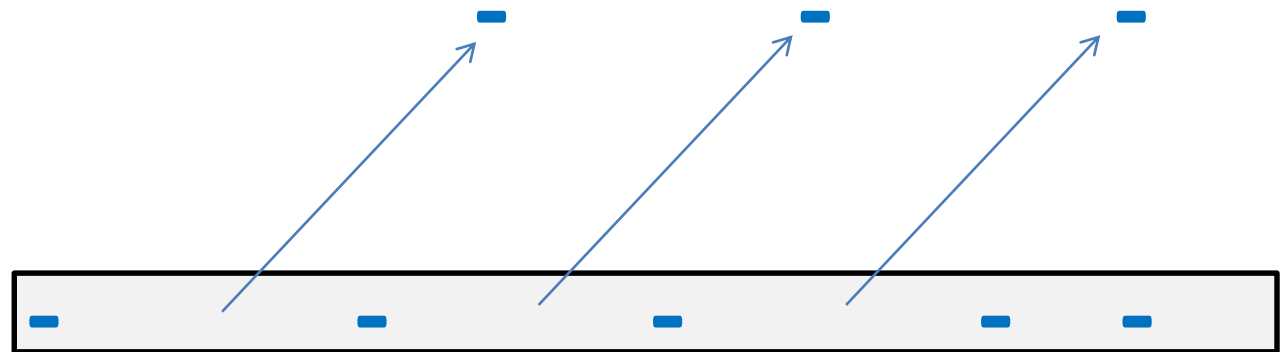




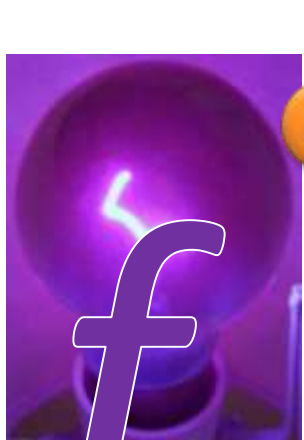
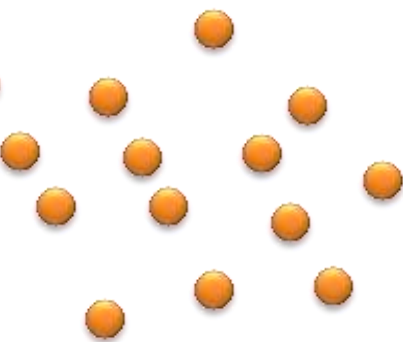
photoelectric emission **X**



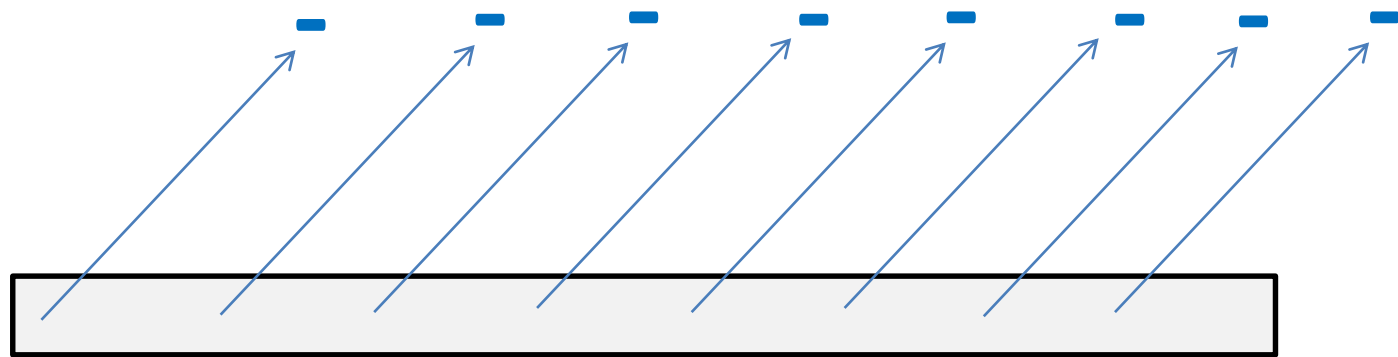
photoelectric emission **✓**









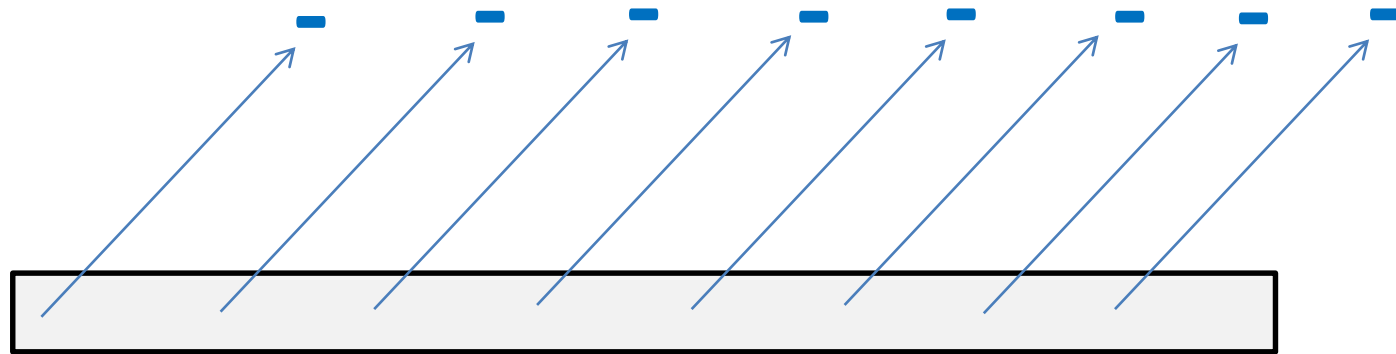




photoelectric emission **X**



photoelectric emission **✓**



LIGHT

consists of

PHOTONS

has a

Particle Nature

