



Additional Assessment Materials

Summer 2021

Pearson Edexcel GCE A Level Physics

Topic 7: Further Mechanics

Test 1

(Public release version)

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Additional Assessment Materials, Summer 2021

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## General guidance to Additional Assessment Materials for use in 2021

### Context

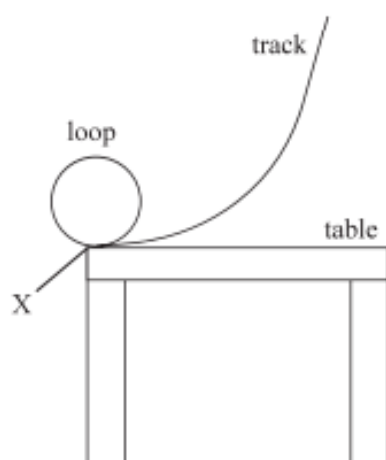
- Additional Assessment Materials are being produced for GCSE, AS and A levels (with the exception of Art and Design).
- The Additional Assessment Materials presented in this booklet are an **optional** part of the range of evidence teachers may use when deciding on a candidate's grade.
- 2021 Additional Assessment Materials have been drawn from previous examination materials, namely past papers.
- Additional Assessment Materials have come from past papers both published (those materials available publicly) and unpublished (those currently under padlock to our centres) presented in a different format to allow teachers to adapt them for use with candidate.

### Purpose

- The purpose of this resource is to provide qualification-specific sets/groups of questions covering the knowledge, skills and understanding relevant to this Pearson qualification.
- This document should be used in conjunction with the mapping guidance which will map content and/or skills covered within each set of questions.
- These materials are only intended to support the summer 2021 series.

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11 A track for toy cars can be built with a circular loop as shown.



A toy car is placed on the track at various heights. It travels around the loop before leaving the track horizontally at X.

- (a) The loop has radius  $r$  and the mass of the toy car is  $m$ . It is possible for a toy car to complete the loop without losing contact with the inside of the track.

For this to occur the minimum speed of the toy car at the top of the loop  $v_{\text{top}}$  is given by

$$v_{\text{top}} = \sqrt{gr}$$

Explain why.

(2)

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**TOTAL FOR PAPER IS 32 MARKS**