	What	students need to lear	n:
Горіс	Content		Guidance
	Ι	Ι	
6 Further vectors	6.1	Understand and use the vector and Cartesian forms of an equation of a straight line in 3-D.	The forms, $r = a + \lambda b$ and $\frac{x-a_1}{b_1} = \frac{x-a_2}{b_2} = \frac{x-a_3}{b_3}$ Find the point of intersection of two straight lines given in vector form. Students should be familiar with the concept of skew lines and parallel lines.
	6.2	Understand and use the vector and Cartesian forms of the equation of a plane.	The forms r = a + $\lambda$ b + $\mu$ c and ax + by + cz = d
	6.3	Calculate the scalar product and use it to express the equation of a plane, and to calculate the angle between two lines, the angle between two planes and the angle between a line and a plane.	$\mathbf{a}.\mathbf{b} =  \mathbf{a}   \mathbf{b}  \cos \theta$ The form $\mathbf{r}.\mathbf{n} = k$ for a plane.
	6.4	Check whether vectors are perpendicular by using the scalar product.	Knowledge of the property that $a.b = 0$ if the vectors $a$ and $b$ are perpendicular.

Торіс	What	students need to lear	n:
	Conte	nt	Guidance
<b>6</b> <b>Further vectors</b> <i>continued</i>	6.5	Find the intersection of a line and a plane. Calculate the perpendicular distance between two lines, from a point to a line and from a point to a plane.	The perpendicular distance from $(\alpha, \beta, \gamma)$ to $n_1 x + n_2 y + n_3 z + d = 0$ is $\frac{ n_1 \alpha + n_2 \beta + n_3 \gamma + d }{\sqrt{n_1^2 + n_2^2 + n_3^2}}$