Physics > Big idea PES: Earth in space > Topic PES2: Earth and Sun

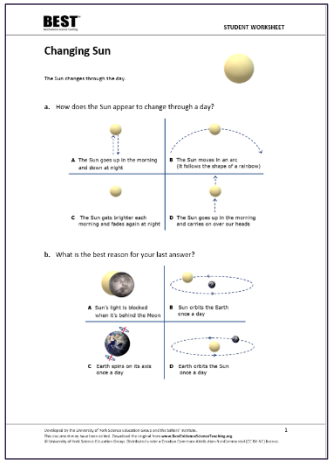
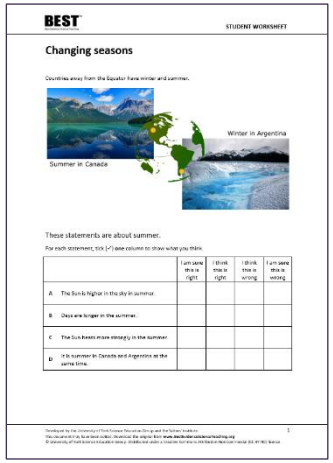
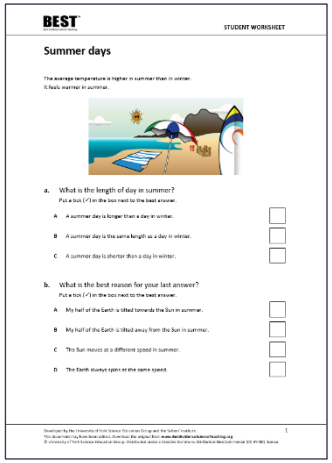
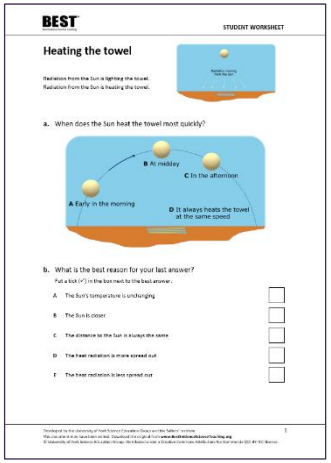
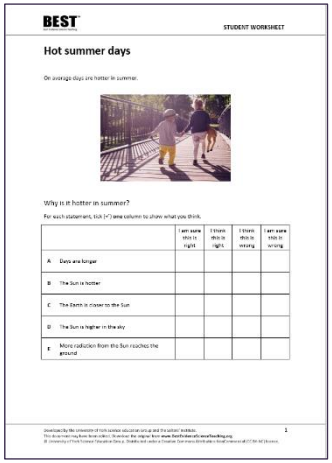
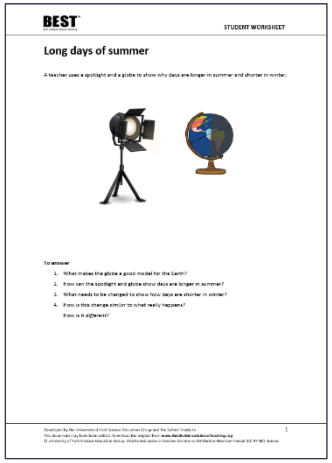
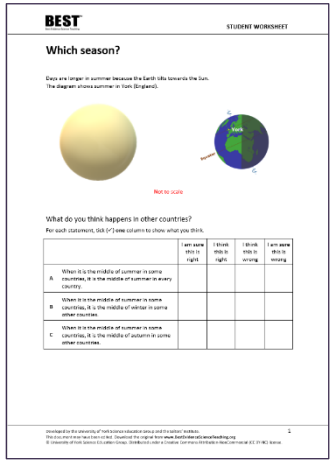
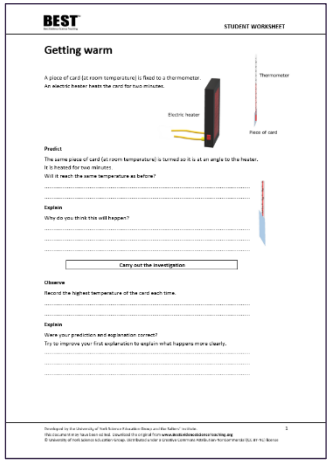
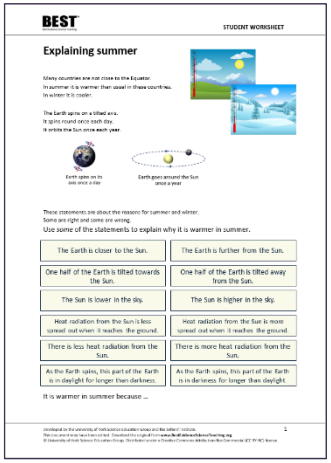
Key concept (age 11-14)
PES2.1: Days and seasons

Progression toolkit: Days and seasons

Learning focus	The temperature is higher in the summer because the tilt of the spinning Earth increases the length of a day *and* increases the heating effect of the Sun's radiation.				
As students' conceptual understanding progresses they can:	CONCEPTUAL PROGRESSION →				
	Describe the apparent movement of the Sun during the day. **P**	Describe the effect of seasons on temperature, day length and the apparent movement of the Sun. **P**	Explain why days are longer in summer and shorter in winter.	Explain why the angle of the Sun changes the effect of its heating.	Explain why average temperature is higher in summer and lower in winter.
Diagnostic questions	Changing Sun	Changing seasons	Summer days	Heating the towel	Hot summer days
Response activities	Long days of summer			Getting warm	Explaining summer
			Which season?		

Key:

P Prior understanding from earlier stages of learning

Changing Sun	Changing seasons	Summer days	Heating the towel	Hot summer days
				
Two-tier multiple choice	Confidence grid	Two-tier multiple choice	Two-tier multiple choice	Confidence grid
Long days of summer	**Which season?**	**Getting warm**	**Explaining summer**	
				
Critiquing a representation	Confidence grid	Predict, explain; observe, explain	Explanation story	