Digital & Print resource
Key Information Sheet

TEACH to DREAM

Teacher Information

Design, Engineer and Build resources have been created to help middle school students engage with STEM/STEAM.

Students use their scientific /engineering), technological, mathematical skills to help problem solve and create an end product. They are then able to use their artistic skills to help create a design/ look that will appeal to their targeted audience.

Items needed to successfully run each challenge:

The resources used are readily available in most classrooms or can be purchased at a local shop. You can negotiate with your students about additional materials or take one out if you don't have access to it (tell the students the company is currently out of supply ☺)

Tape	Glue	Paper
Cardboard	Pop sticks/ craft sticks	Straws
Cups	Scissors	String

Time frame required:

These projects can run for as little or as long as you like depending on your lesson requirements. It generally would take a minimum of 30minutes to complete. You can extend the students thinking and ask them to re evaluate and improve if you have significantly longer time. On the students sheet they are asked to circle the time frame they have been given to complete the task.

On this student sheet it also has a space for the maximum model size. You can set this depending on the size or paper/ cardboard and space you have to display the end products.

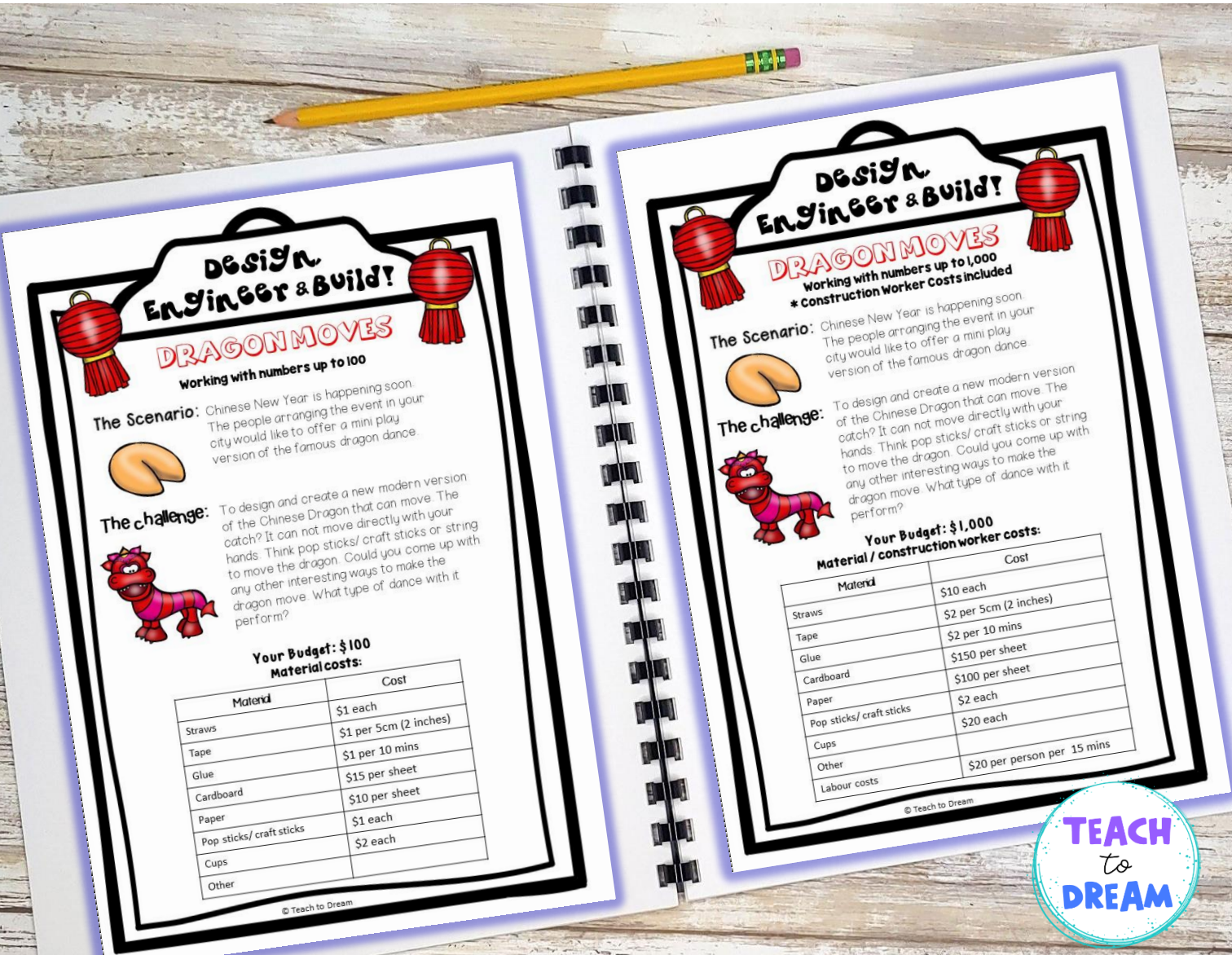
Restrictions:

To make it more realist the students are required to work within boundaries. They have a set budget of either $100 or $1,000 (allowing you to cater for all learning levels). The students can then either keep a tally of their expenses using the table or coupons provided. You may also decide to 'fine' your students for unsafe practices (ie going into another construction zone – another group's work area, not using equipment properly etc).

Links to other curriculum areas:

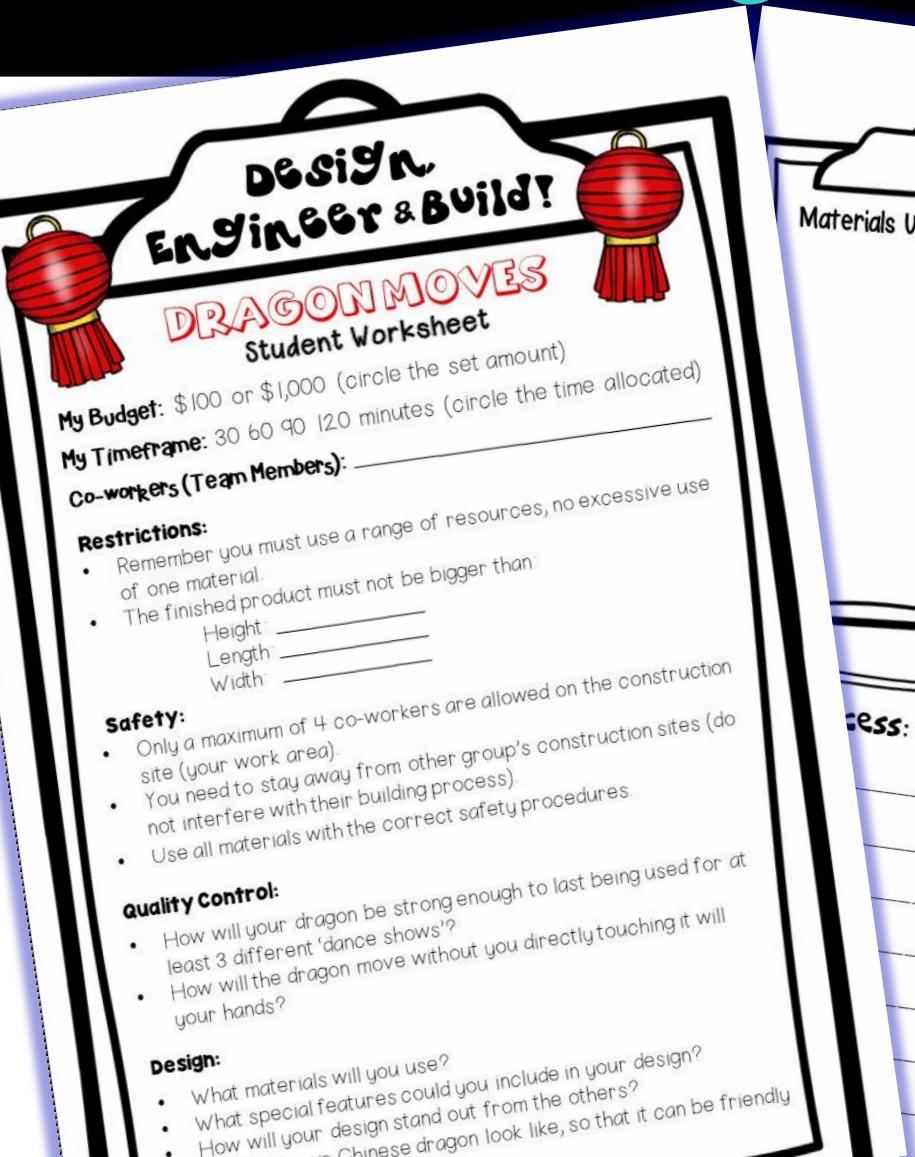
- Geography
- Health (group work/ social skills)
- English

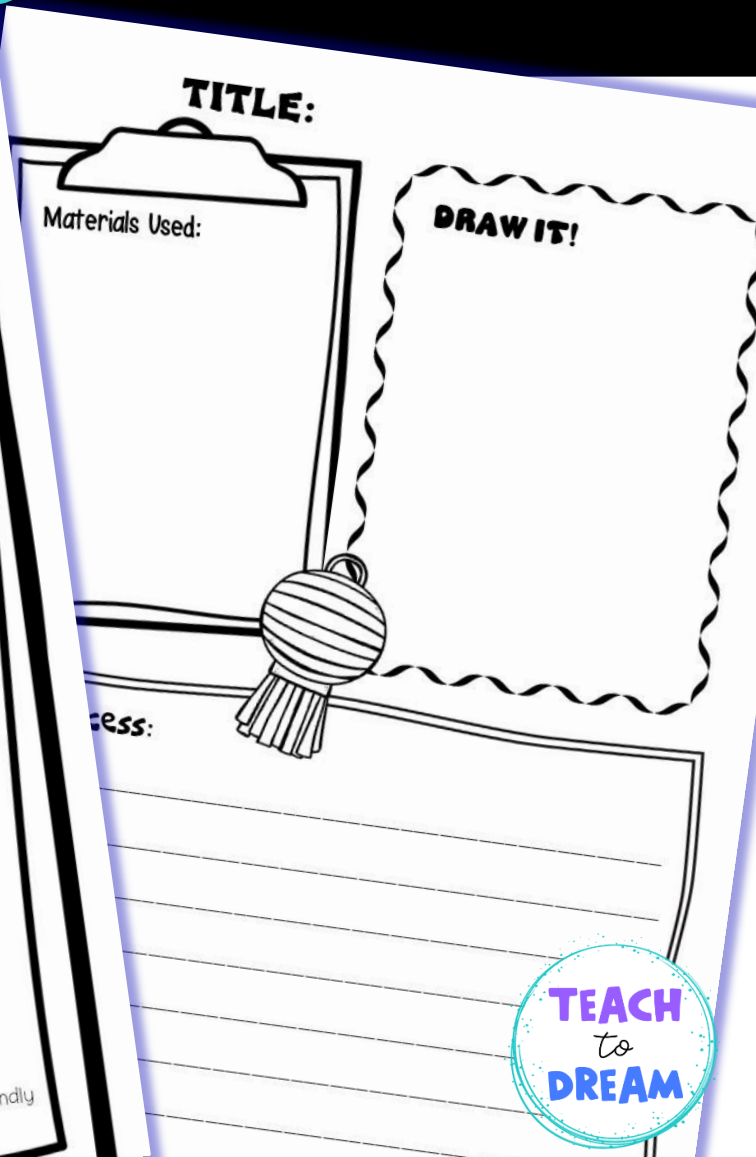
4 Levels: Differentiation
Cater for all students



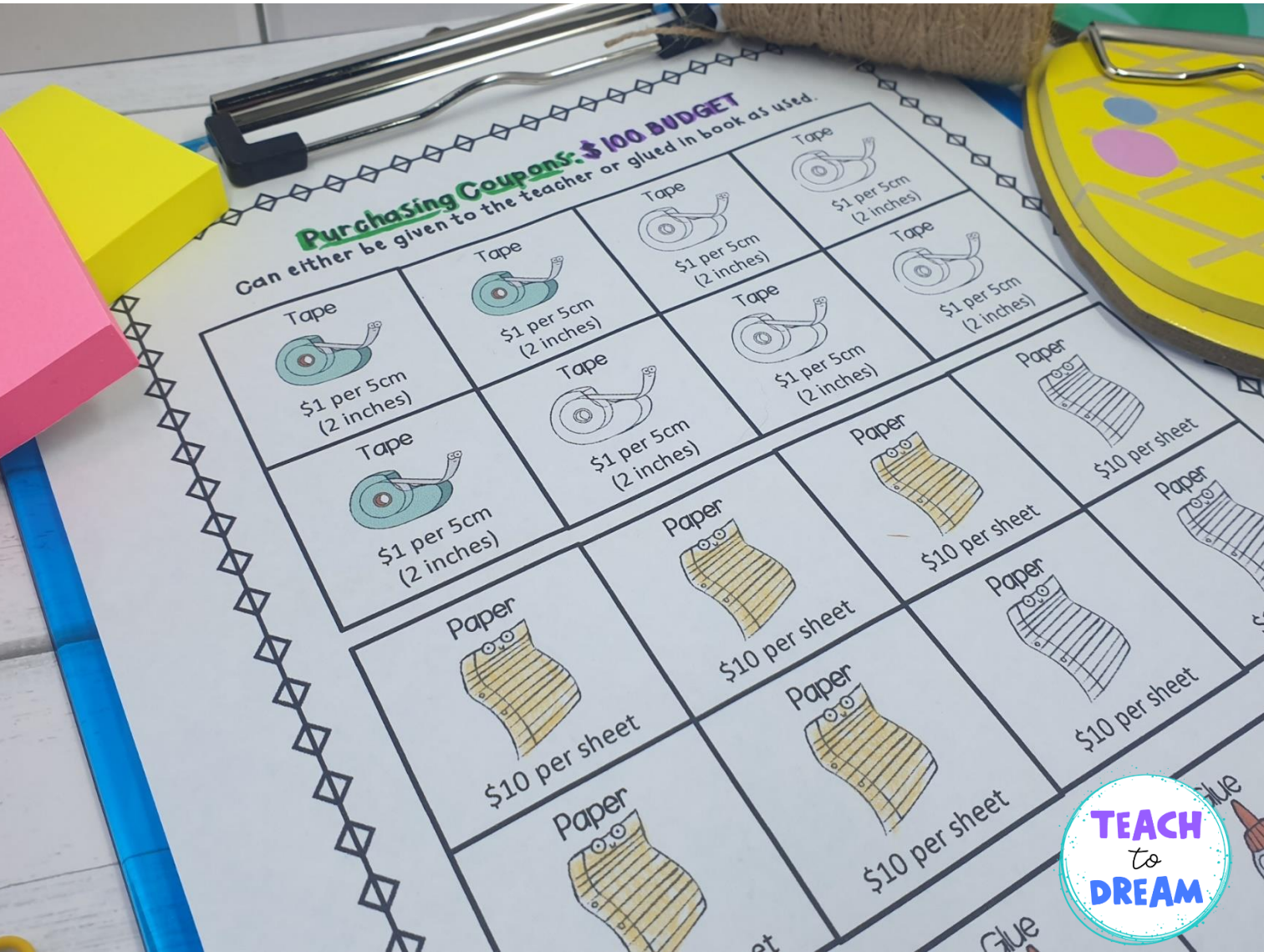
TEACH to DREAM

Group Planning Sheets

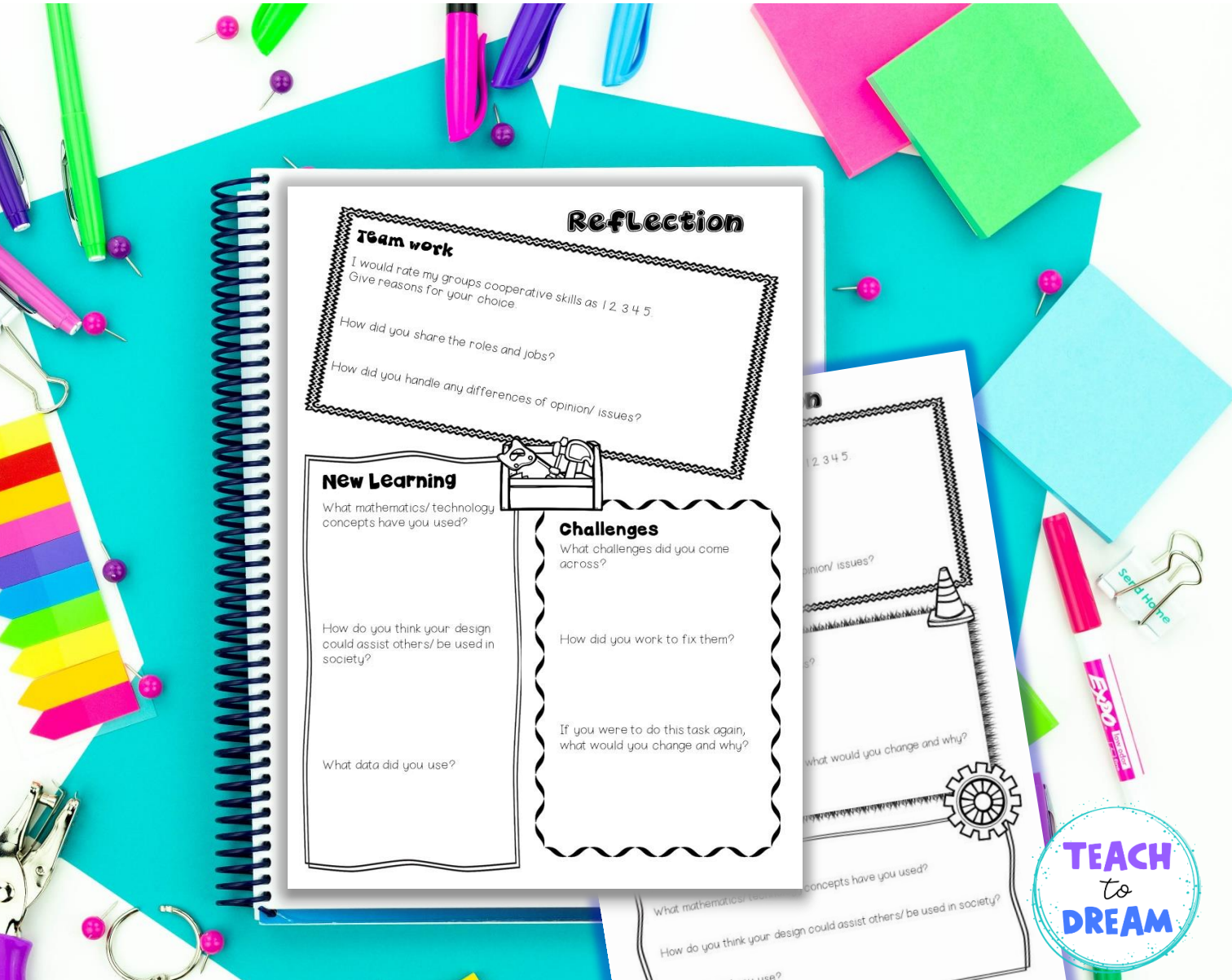




Have students work within a set budget

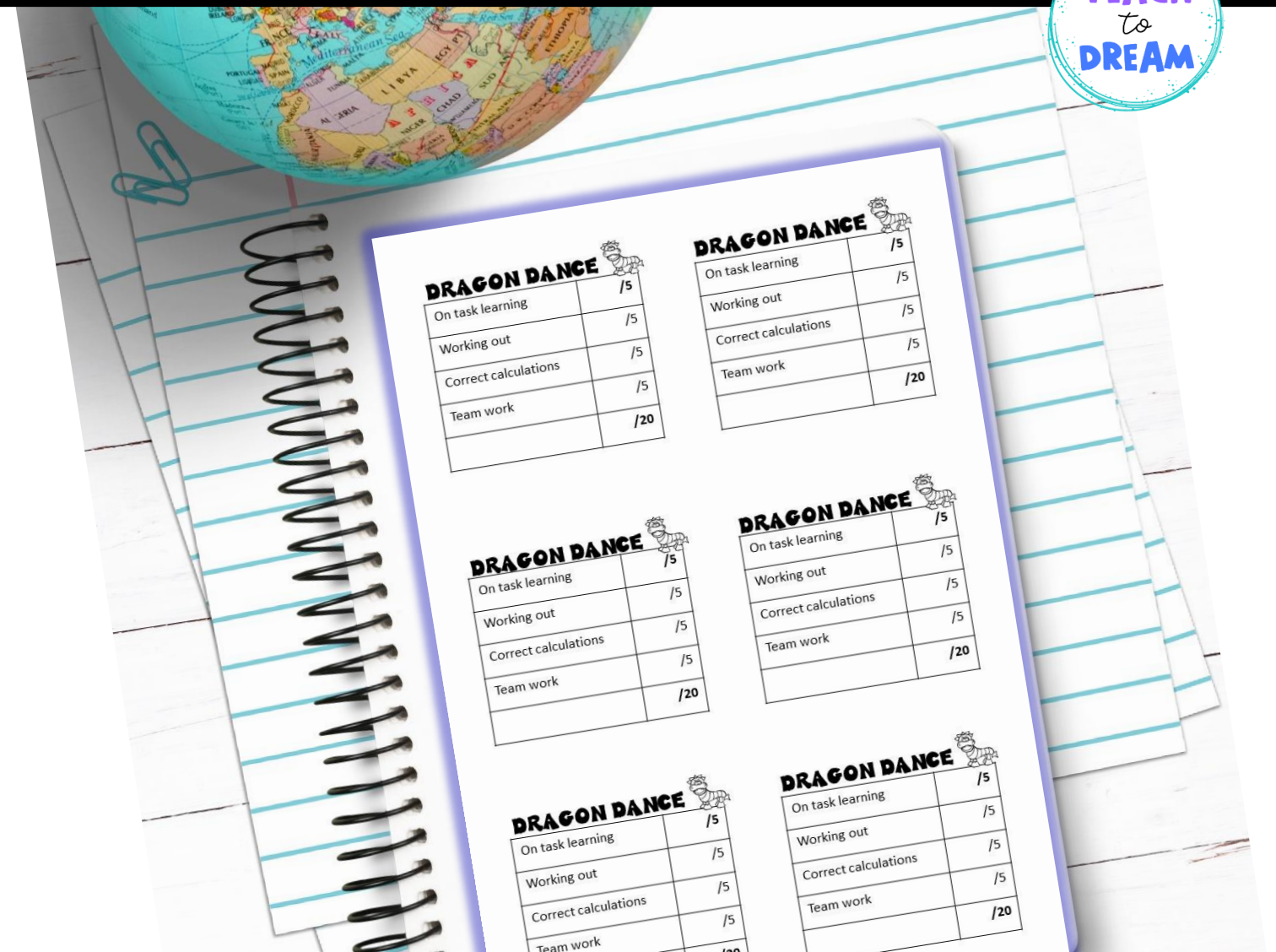


Encourage groups to Reflect on their learning



Quick & Easy Assessment

TEACH to DREAM



B&W version
Also available

TEACH to DREAM

Design, Engineer & Build!

DRAGON MOVES

Working with numbers up to 100

The Scenario: Chinese New Year is happening soon. The people arranging the event in your city would like to offer a mini play version of the famous dragon dance.

The challenge: To design and create a new modern version of the Chinese Dragon that can move. The catch? It can not move directly with your hands. Think pop sticks/ craft sticks or string to move the dragon. Could you come up with any other interesting ways to make the dragon move. What type of dance with it perform?

Working with numbers up to 1,000
*** Construction Worker Costs included**

Team work

I would rate my groups cooperative skills as 1 2 3 4 5
Give reasons for your choice.

How did you share the roles and jobs?

How did you handle any differences of opinion/ issues?

Challenges

What challenges did you
across?

How did you work to fix th

If you were to do this task aga
what would you change and wh

ata did you use?

do you think your design
d assist others/ be used in
ty?

Purchasing Coupons: $1,000 BUDGET
Can either be given to the teacher or glued in book as used.

Craft Sticks $2 each	Craft Sticks $2 each	Craft Sticks $2 each	Craft Sticks $2 each
Craft Sticks $2 each	Craft Sticks $2 each	Craft Sticks $2 each	Craft Sticks $2 each
Straws $10 each	Straws $10 each	Straws $10 each	Straw
Straws $10 each	Straws $10 each	Straws $10 each	
	Cup	Cup	

Student Worksheet

dget: $100 or $1,000 (circle the set amount)
neframe: 30 60 90 120 minutes (circle the time allocated)
rkers (Team Members): _____
ictions:
member you must use a range of resources, no excessive use one material.
e finished product must not be bigger than:
Height _____

TITLE:

DESIGN IT!

Explain it!

Why did you chose your design? _____

What was your total cost, why?