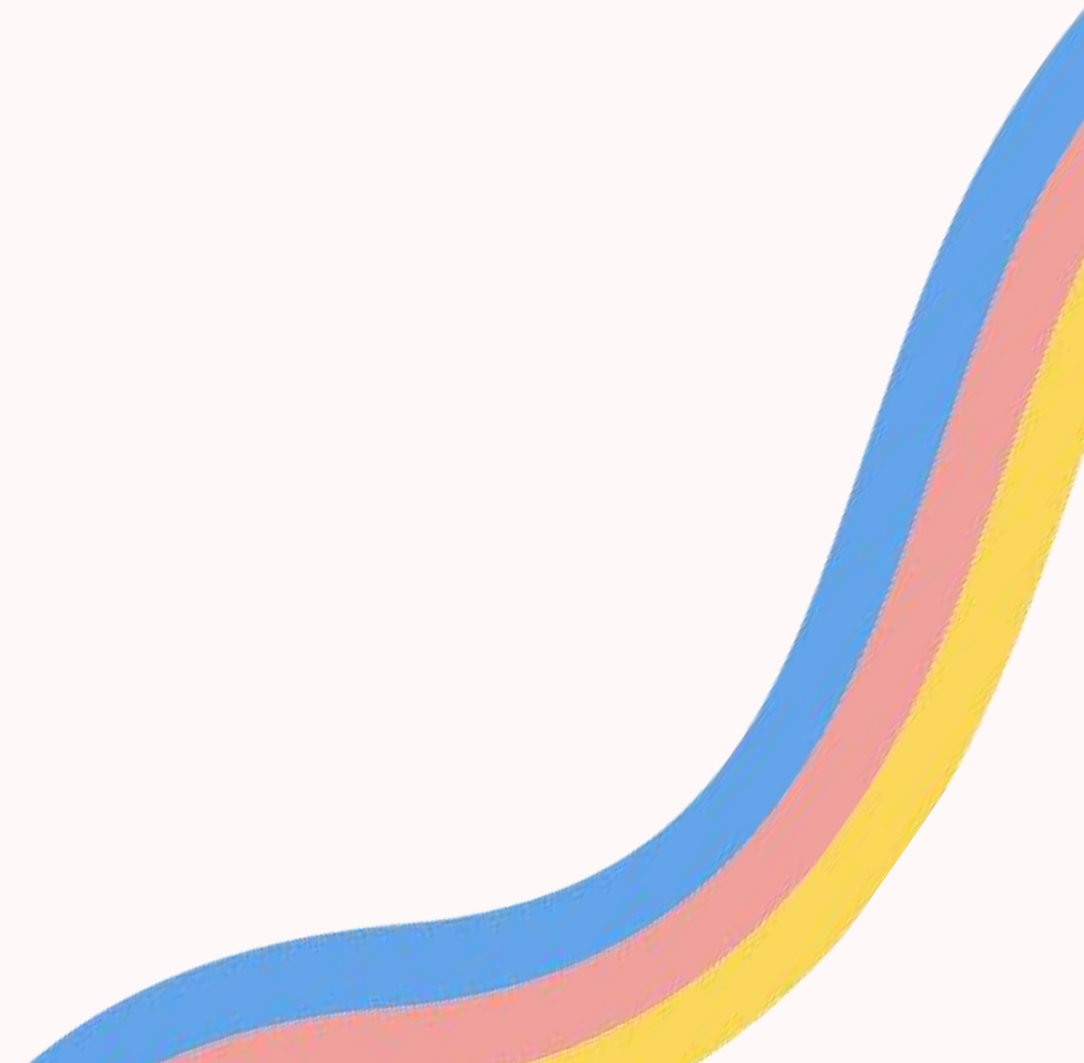


# A *nice* course in *Nice*

25-30 marzo 2024

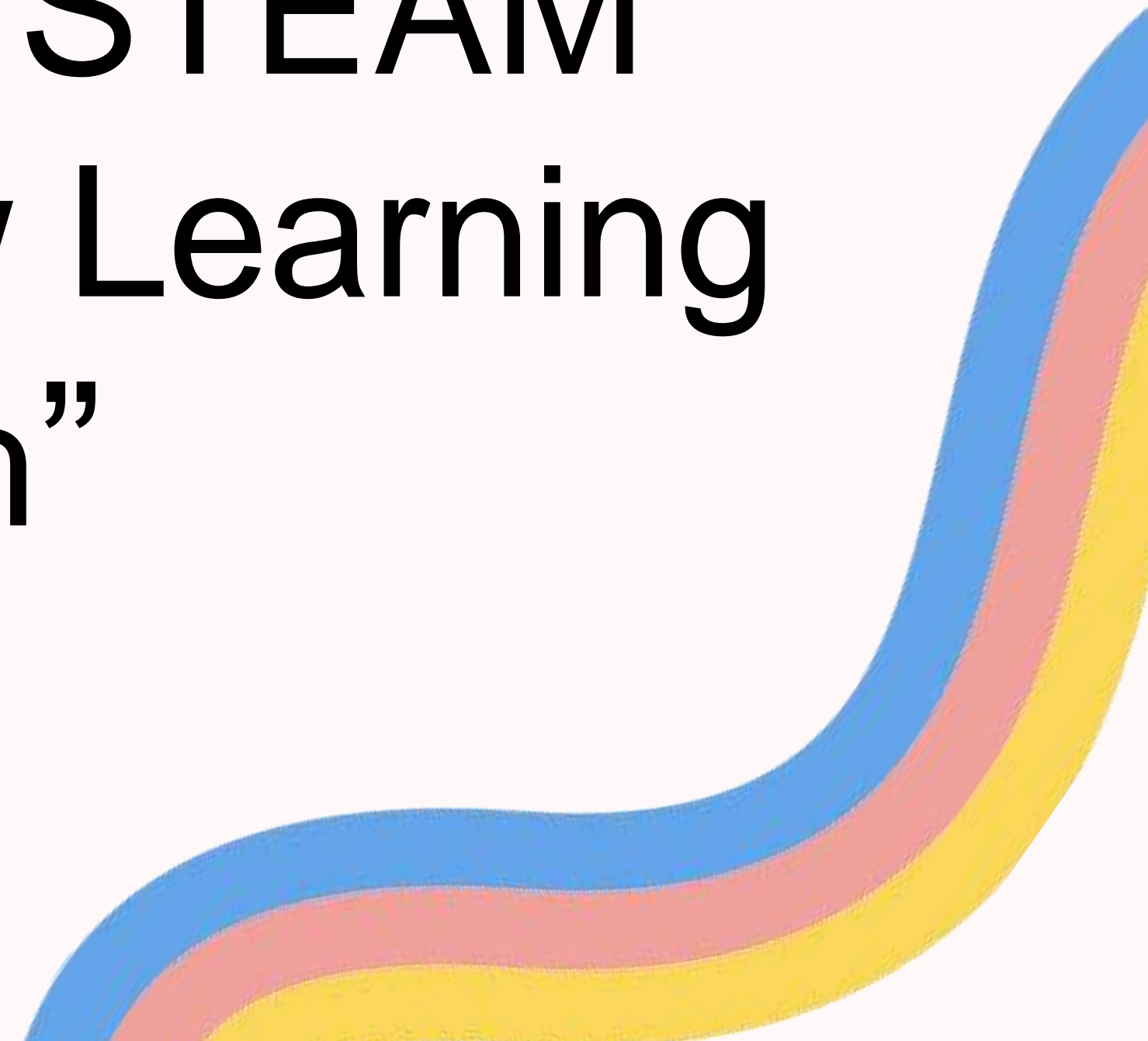


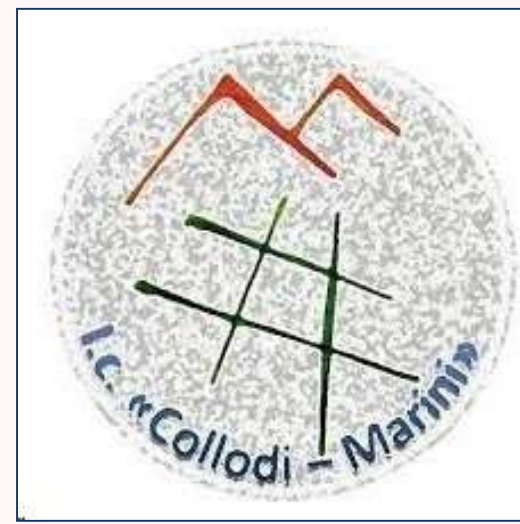


Co-funded by the  
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of the European Union



# “From STEM to STEAM Education: A New Learning Approach”





Co-funded by the  
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of the European Union



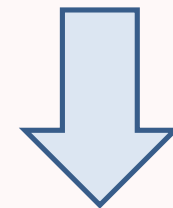
## **Docenti coinvolte**

- **Daniela Palma- scuola secondaria di primo grado**
- **Arianna Proia- scuola secondaria di primo grado**
- **Lucia Lippa- scuola primaria**
- **Annarita Frabotta- scuola primaria**
- **Alessandra Palma- scuola dell'infanzia**

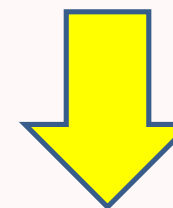
## **Formatrice**

- **Ruby Soames**

STEM: Science-Technology-  
Engineering-Math



STEAM: Science-Technology-  
Engineering-Art-Math



STREAM: Science-Technology-  
Reading & Writing-Engineering-Art-  
Math

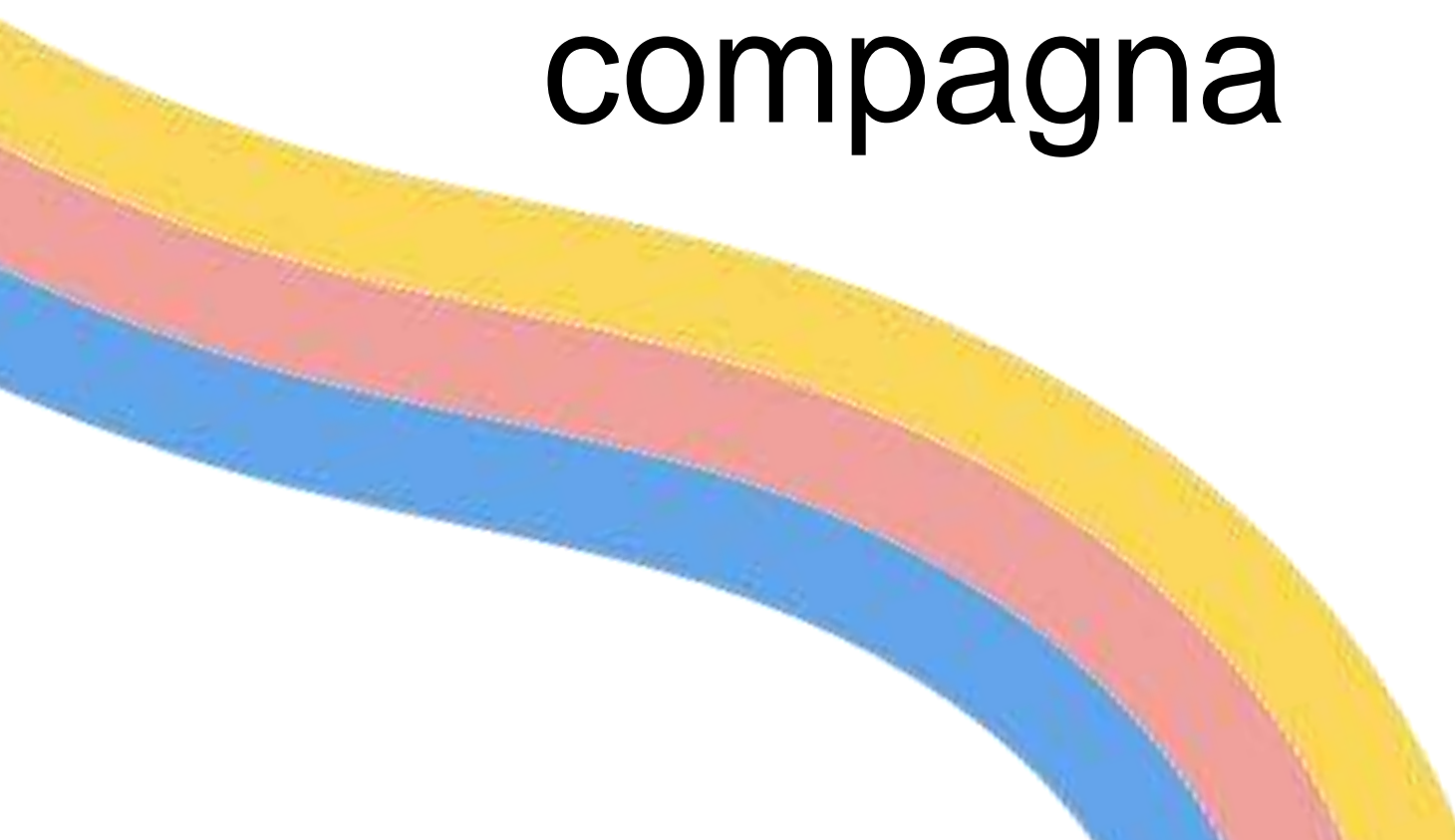


# A STREAM Lesson Plan

## 1. Warm-up-presentation stage



**Mugshot activity:** gli alunni disegnano il proprio compagno o la propria compagna



# A STREAM Lesson Plan

## 1. Warm-up-presentation stage

- **K.W.L. Table:** gli alunni compilano le prime due colonne della tabella:

K-ciò che già conoscono (**K**now) sulle  
STREAM e

W-ciò (**W**hat) che vorrebbero imparare  
sulle STREAM





# A STREAM Lesson Plan

## 1. Warm-up-presentation stage



- **Condivisione obiettivi-goals:** gli alunni vengono informati su cosa saranno chiamati a fare



# A STREAM Lesson Plan

1. Warm-up-presentation stage
  - Sudddivisione degli obiettivi in micro obiettivi (chunking).



specific  
attainable  
measurable  
time bound



# A STREAM Lesson Plan



## 2. Practice stage

**Reflective Journal Activity:** gli alunni descrivono l'insegnante che più li ha influenzati



**Core Thinking Listening Routine:** in coppia un alunno (**speaker**) descrive l'insegnante e l'altro (**listener**), lo ascolta rispettando le seguenti indicazioni:



# A STREAM Lesson Plan \*

## 2. Practice stage

### Core Thinking Listening Routine

- Sospensione del giudizio: ascolto empatico che implica il non giudicare (listener)
- Riflessione prima di intervenire (listener)
- Chiarimento (speaker)
- Riassunto (speaker)
- Condivisione (listener)



# A STREAM Lesson Plan

## 2. Practice stage



Listening Routine  
and  
Effective Communication

Per il precedente role-play lo speaker ed il listener  
hanno

messo in atto la strategia del  
**THINK-PAIR-SHARE**

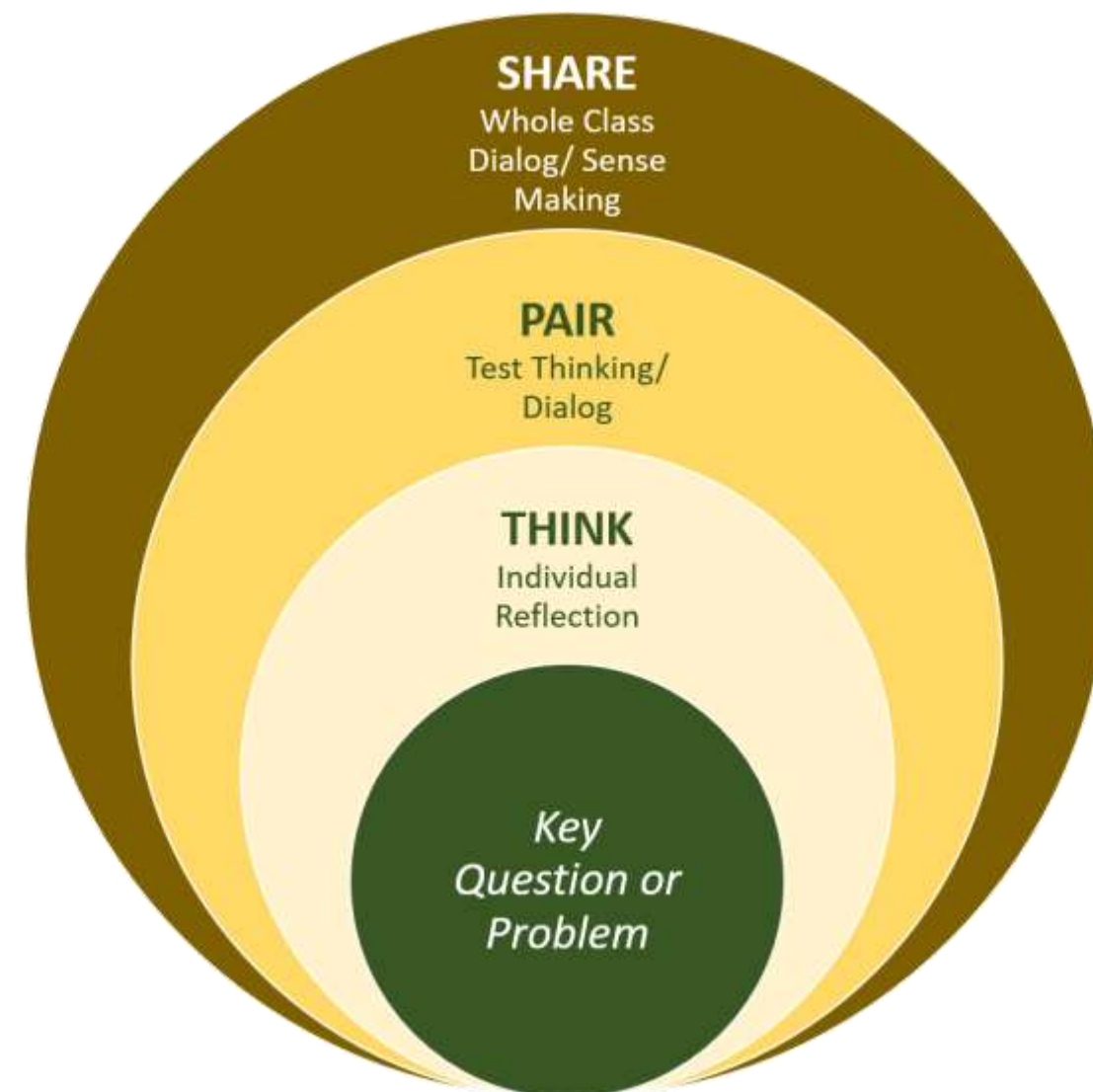


# A **STREAM** Lesson Plan



## 2. Practice stage

### THINK-PAIR-SHARE





# A STREAM Lesson Plan

## 2. Practice stage

**THINK:** riflessione individuale dello studente-  
individual reflection

**PAIR:** dialogo in coppia –test thinking

**SHARE:** discussione con l'intera classe-  
sense making



# A STREAM Lesson Plan



Riflessione sugli stili di apprendimento degli  
alunni attraverso lo  
*'SMART' questionnaire*  
per personalizzare gli obiettivi



# A STREAM Lesson Plan



<p style="text-align: center;"><i><b>"BODY/KINETIC SMART"</b></i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> I enjoy sports</li><li><input type="checkbox"/> I like working with my hands</li><li><input type="checkbox"/> I understand better with "hands on" activities</li><li><input type="checkbox"/> I like acting</li><li><input type="checkbox"/> I like to move around when I'm working</li><li><input type="checkbox"/> I prefer sporting programs/movies on television</li><li><input type="checkbox"/> If you were giving me a present, I'd like some sports equipment/activity</li><li><input type="checkbox"/> I love to dance</li><li><input type="checkbox"/> Favourite activities at school are PE and drama</li></ul> <p style="text-align: center;">SCORE: __</p>	<p style="text-align: center;"><i><b>"MUSIC SMART"</b></i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> I like singing</li><li><input type="checkbox"/> I enjoy listening to music</li><li><input type="checkbox"/> I find sounds fascinating</li><li><input type="checkbox"/> I play a musical instrument</li><li><input type="checkbox"/> I sometimes make up my own songs</li><li><input type="checkbox"/> I often tap my feet or fingers to various rhythms</li><li><input type="checkbox"/> Favourite TV programs are programs with music and singing</li><li><input type="checkbox"/> If you were giving me a present, I'd like a music CD or iTunes voucher</li><li><input type="checkbox"/> My favourite subject/passion is music</li></ul> <p style="text-align: center;">SCORE: __</p>
<p style="text-align: center;"><i><b>"PEOPLE/GROUP SMART"</b></i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> I really like working with people</li><li><input type="checkbox"/> I enjoy helping others</li><li><input type="checkbox"/> I like meeting new people</li><li><input type="checkbox"/> I really enjoy playing sport in a team</li><li><input type="checkbox"/> I have a lot of friends</li><li><input type="checkbox"/> I have good ideas for our classroom</li><li><input type="checkbox"/> My favourite TV shows/ movies are about families &amp; friends</li><li><input type="checkbox"/> If you were to give me a present, I'd like an outing/activity with friends</li><li><input type="checkbox"/> Favourite time at school is when we have group work</li></ul> <p style="text-align: center;">SCORE: __</p>	<p style="text-align: center;"><i><b>"SELF SMART"</b></i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> I prefer to work on my own</li><li><input type="checkbox"/> I like to think things through in my mind</li><li><input type="checkbox"/> I keep a diary or journal</li><li><input type="checkbox"/> I often reflect on how well I am doing</li><li><input type="checkbox"/> I like to think about how I feel</li><li><input type="checkbox"/> I often wonder what other people are thinking</li><li><input type="checkbox"/> I like to set goals</li><li><input type="checkbox"/> If you were giving me a present, I'd like a diary</li><li><input type="checkbox"/> My favourite time at school is when I can choose my own individual work</li></ul> <p style="text-align: center;">SCORE: __</p>
<p style="text-align: center;"><i><b>"WORD/LINGUISTIC SMART"</b></i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> I really like reading</li><li><input type="checkbox"/> I like to write stories and poems for others to read</li><li><input type="checkbox"/> I know the meaning of many words</li><li><input type="checkbox"/> I enjoy word puzzles and games like Taboo, crosswords, and word searches</li><li><input type="checkbox"/> I like telling jokes, riddles, and stories</li><li><input type="checkbox"/> I like making speeches, giving oral presentations, and having debates</li><li><input type="checkbox"/> Favourite things to watch are shows/movies with clever scripts</li><li><input type="checkbox"/> If you were giving me a present, I'd like a book</li><li><input type="checkbox"/> My favourite subject is English/ Language Arts</li></ul> <p style="text-align: center;">SCORE: __</p>	<p style="text-align: center;"><i><b>"MATH/ LOGIC SMART"</b></i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> I like to learn step by step</li><li><input type="checkbox"/> I enjoy solving problems</li><li><input type="checkbox"/> I enjoy explaining how things work</li><li><input type="checkbox"/> Working with numbers and shapes is fun</li><li><input type="checkbox"/> I like setting up science experiments</li><li><input type="checkbox"/> I am happy when things seem logical (they make sense and can be explained)</li><li><input type="checkbox"/> My favourite TV programs are documentaries</li><li><input type="checkbox"/> If you were giving me a present I'd like a board or computer game</li><li><input type="checkbox"/> My favourite subjects are maths and science</li></ul> <p style="text-align: center;">SCORE: __</p>
<p style="text-align: center;"><i><b>"VISUAL SMART"</b></i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> I like drawing and painting</li><li><input type="checkbox"/> I enjoy making models, murals and collages</li><li><input type="checkbox"/> I like using pictures and diagrams to learn</li><li><input type="checkbox"/> I can see the finished product in my mind</li><li><input type="checkbox"/> Colour is important to me</li><li><input type="checkbox"/> I can draw maps from memory</li><li><input type="checkbox"/> I prefer television programs involving art and design ideas and demonstrations</li><li><input type="checkbox"/> If you were going to give me a present, I would like a jigsaw puzzle</li><li><input type="checkbox"/> My favourite subject is art</li></ul> <p style="text-align: center;">SCORE: __</p>	<p style="text-align: center;"><i><b>"NATURE SMART"</b></i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> My energy level is lifted by the outdoors</li><li><input type="checkbox"/> I like to hike through bushland settings</li><li><input type="checkbox"/> I have a pet/s that I care for myself</li><li><input type="checkbox"/> I enjoy gardening</li><li><input type="checkbox"/> I prefer television programs with a focus on nature like <i>Discovery Chanel</i> and <i>Animal Planet</i></li><li><input type="checkbox"/> I enjoy camping and hiking</li><li><input type="checkbox"/> If you were to give me a present, I'd like a natural experience</li><li><input type="checkbox"/> I prefer to be outside</li><li><input type="checkbox"/> I care about the environment by reusing and recycling</li></ul> <p style="text-align: center;">SCORE: __</p>



# A STREAM Lesson Plan



## 3. Evaluation stage: tassonomia di Bloom per obiettivi efficaci

BLOOM'S TAXONOMY VERBS					
REMEMBER	UNDERSTAND	APPLY	ANALYZE	EVALUATE	CREATE
define memorize repeat copy define state list quote find	summarize compare describe explain discuss recognize report translate categorize	determine present examine implement solve use demonstrate interpret rehearse	organize compare contrast experiment test question connect deduce link	argue defend judge support value weigh reflect review grade	design compose construct develop formulate blog build write simulate

TEFL-ENGLISH.NET

DREAM  
BIG

SET  
GOALS

TAKE  
ACTION

Remember  
SMART  
goals?

What action  
can you take?

I WILL  
+  
ACTION VERB

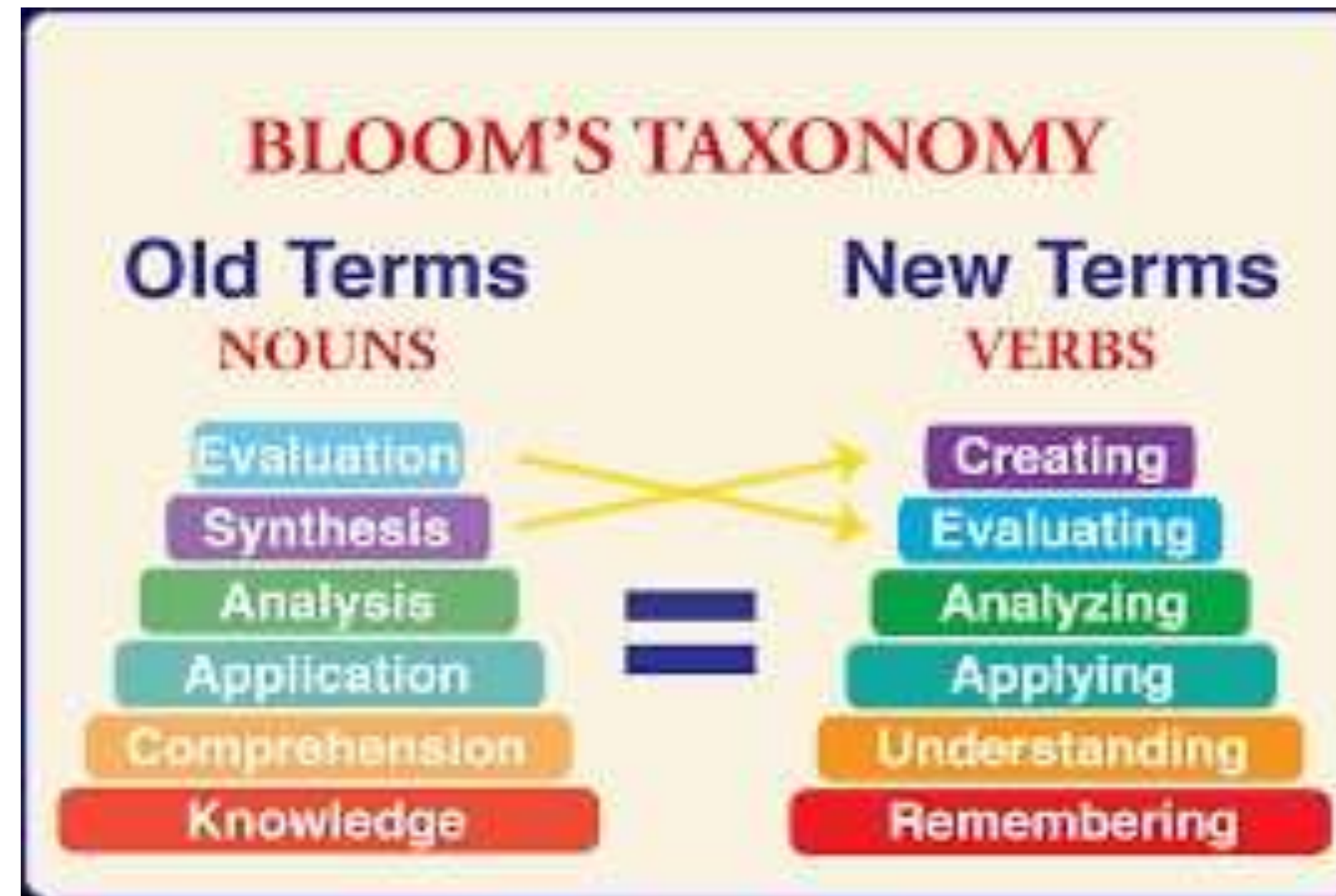
euro  
nass



# A STREAM Lesson Plan



verso il pensiero divergente

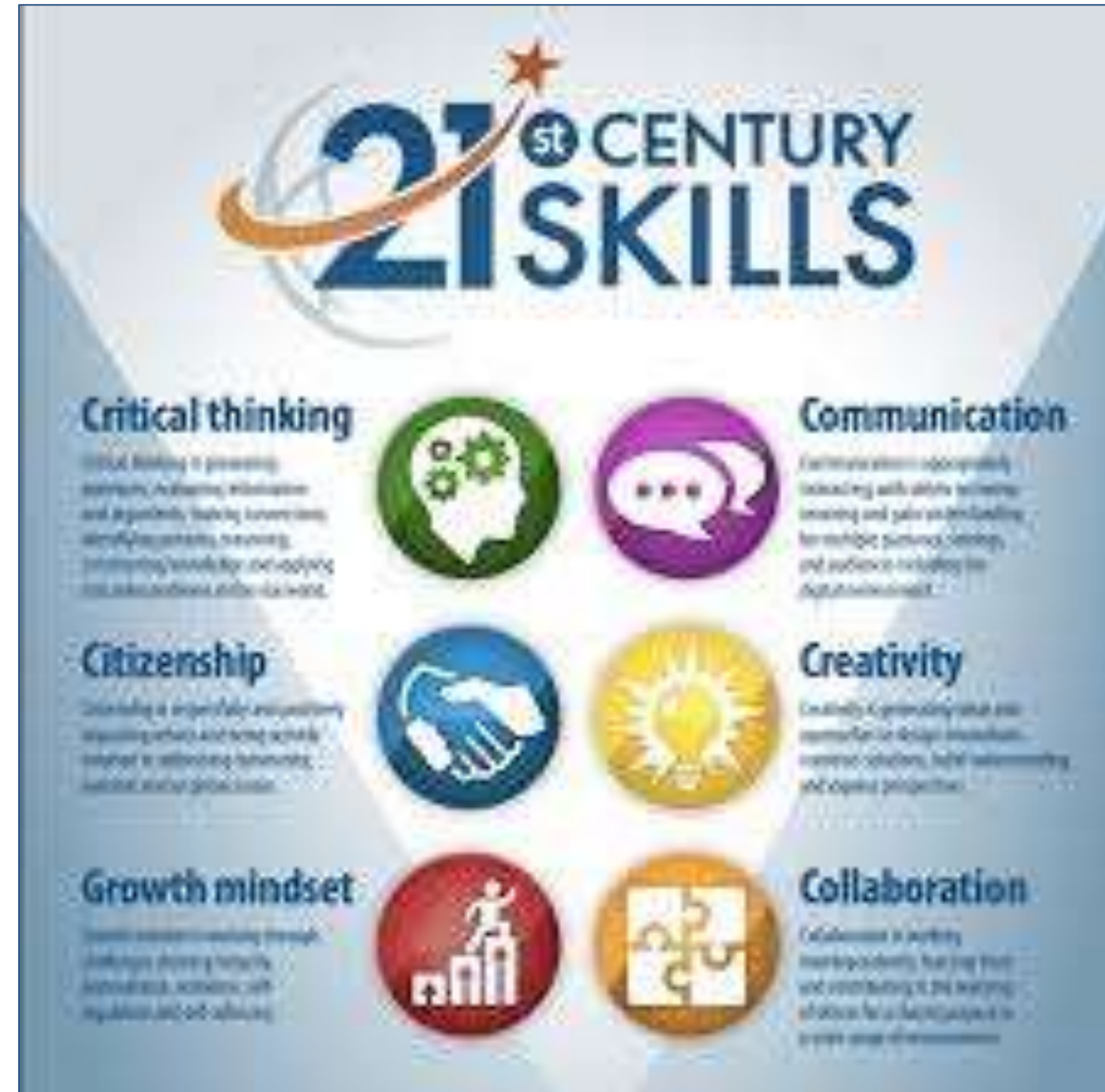




# A STREAM Lesson Plan



## 21<sup>st</sup> Century Skills for Students





# A STREAM Lesson Plan



3. Evaluation stage: gli alunni compilano la terza colonna della K.W.L. table:

L-ciò che hanno appreso (**L**earned)

# Come favorire la **creatività** in una lezione STEM?



Includendo **Art & Design**:



*From Sketch to Stretch*: lettura di un estratto su argomento STEM ed interpretazione tramite **disegno** → STEAM



Come favorire la **creatività** e la riflessione  
in una lezione STEM?

*See-Think-Wonder* Table

What do you **SEE**- vedi ? (evidence)

What do you **THINK**- pensi ? (thinking)

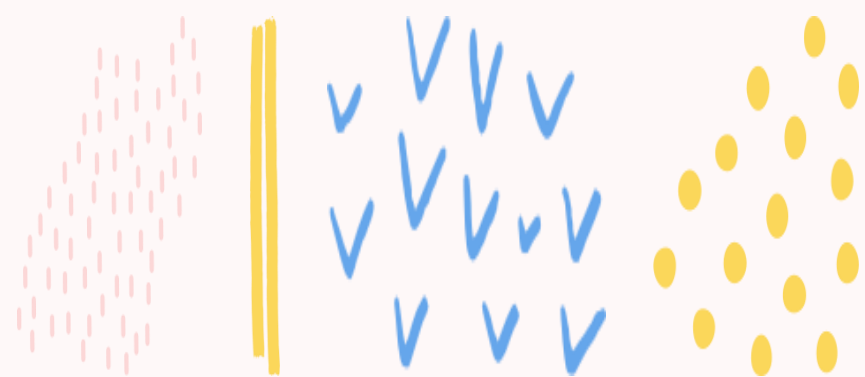
What do you **WONDER**- immagini? (creativity)

Come favorire la **creatività** e la riflessione  
in una lezione STEM?



## *See-Think-Wonder* Table

SEE	THINK	WONDER



*Robin  
Mathew*

**DESIGN IS WHERE  
SCIENCE AND ART  
BREAK EVEN.**



...tutto in un approccio **integrato**  
**Subjects all mix up**

STEM



STEAM



STREAM

# Un viaggio nel pensiero integrato

## MULTIDISCIPLINARY, INTERDISCIPLINARY, TRANSDISCIPLINARY ...a journey in thinking



Multidisciplinary

Multidisciplinary is concerned with studying a topic "in not just one discipline only, but several at the same time" (Nicolescu 2014: 187). Multidisciplinary learning begins and ends with the subject-based content and skills (Beane 1997). The boundaries among the subjects remain. Using an everyday analogy, multidisciplinary is represented as a mixed salad where the ingredients remain separate and distinguishable (Choi and Pak 2006).

ly-what-might-it-look-li...



Interdisciplinary

Interdisciplinarity is concerned "with the links and the transfer of knowledge, methods, concepts and models from one discipline to another" (Padurean and Cheveresan 2010: 126). Disciplinary boundaries may blur. The transfer of knowledge can sometimes yield a new discipline. Again, in everyday analogy, interdisciplinarity is represented as stew, where ingredients are partially distinguishable (Choi and Pak 2006).



Transdisciplinary

Transdisciplinarity "concerns that which is at once between the disciplines, across the different disciplines, and beyond all disciplines" (Nicolescu 2014: 187). Nicolescu notes that a key imperative of transdisciplinary learning is to unite knowledge for the understanding of the present world. In transdisciplinarity, the disciplines are no longer distinguishable, like the ingredients in a cake, and the result is something completely different (Choi and Pak 2006).

<https://sites.google.com/a/sparis.net/conceptualinquiry/transdisciplinary-learning-all-mixed-up>

europa  
pass

Integrare  
Reading & Writing  
(From STEAM to STREAM)  
attraverso

- Digital Storytelling  
con *Story Jumper* e *Book Creator*
- Jigsaw Reading (suddividere la comprensione  
di un testo)
- Brainstorming-Wordcloud con *Mentimeter*

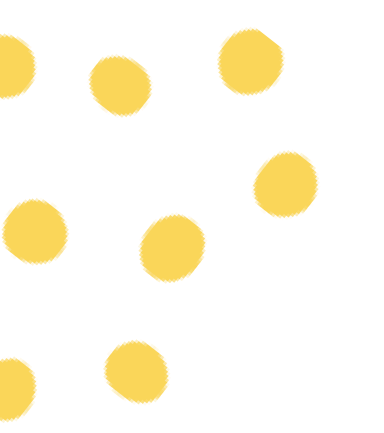


Making a digital story

is a perfect example of

**STREAM** teaching and learning

strategy



# BUONE PRATICHE STEAM

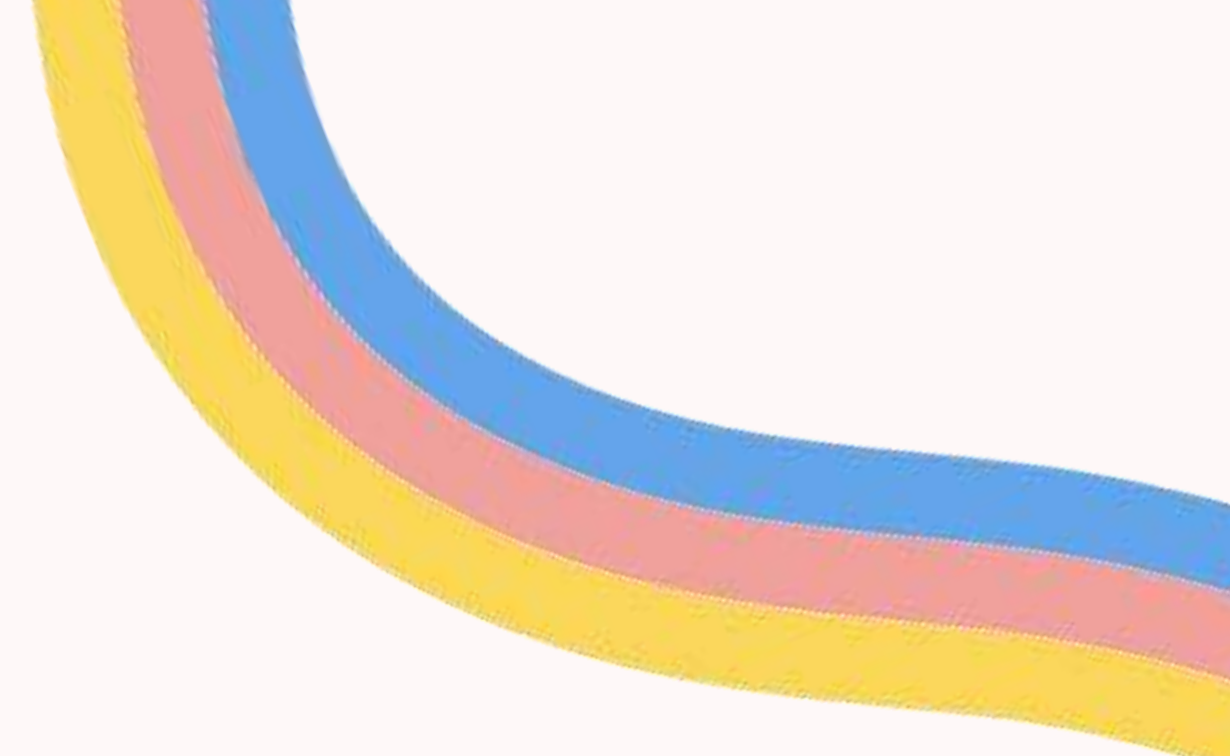
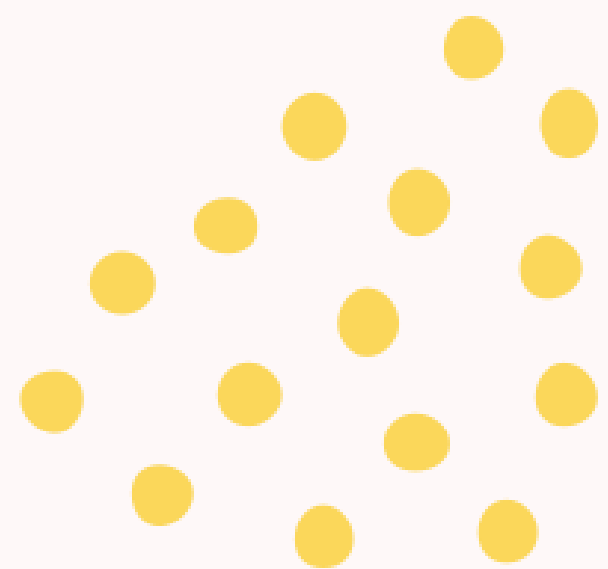
Academy STEAM High School  
Allen Texas USA

▶ PLAY VIDEO

11:0

[https://www.youtube.com/  
watch?v=AwTI2wvmd2g](https://www.youtube.com/watch?v=AwTI2wvmd2g)





Grazie per l'attenzione!

