Séance 1-Signaling textiles: The high-visibility waistcoat

I- Problematic and solutions

1- Describe the situation, what's the problem?

➔

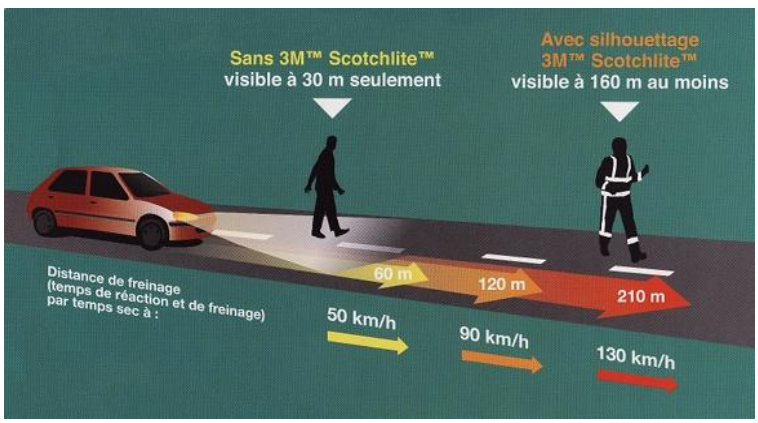
2- Compare with the following situations: What's the difference? In what way is it safer ?

➔

➔

3- What is the purpose of high-visibility clothing?

4- Have a look at this document: Analyse and comment the two different cases:
a- without the high-visibility garment / b - with the high-visibility garment



- Who can be concerned?

- List the different types of safety gear:

II- Different types of safety materials:

1-Practise:

a – Read the two definitions and list the technical vocabulary

Fluorescent material	Retro reflective material
Uses invisible ultraviolet light (UV) from sunlight, and through special pigments, sends it back to the viewer as more visible light. This material only functions when there is a source of natural sunlight. This property offers daytime visibility enhancement not present with other colours.	Created to return light in the direction of the light's source . This property will let a driver to see the light being reflected from the retro reflective material on a person's garment as long as the person is standing in the light's beam.

b-You are given two samples of fabric. Study them, using your cellphone torch to find whether they are different. Note down your findings

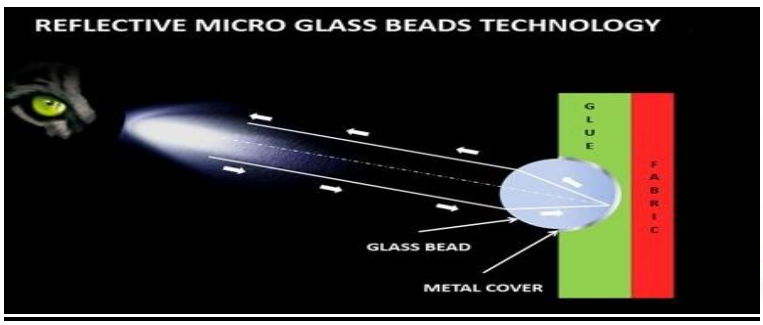
c- Match each sample with its definition

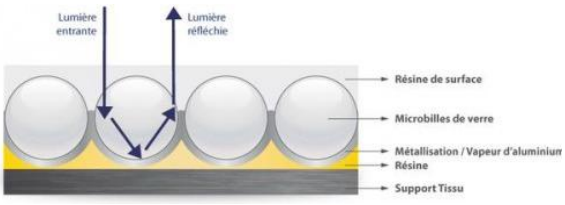
d- Report to the class.

2- The different technologies of retro reflective materials

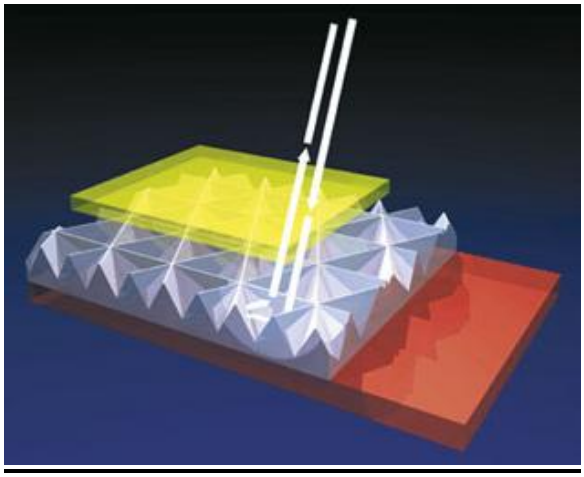
a- Group work: The class is split in 2 groups. Each group studies one technology and explains it to the other group using a precise technical vocabulary – think of specific proprieties and analyse the pros and the cons of each technologies

Group 1: - The micro glass beads technology : the oldest technique





Group 2: - The micro prismatic technology : the most recent technique



III- The different classes of safety apparels:

1- Read the definitions corresponding to the different classes

There are specific standards that impose levels of retro reflective performance,. There are **three classes** of garments based on body coverage. Each class covers the torso (waist to neck) and/or limbs according to the minimum body coverage areas

- **Class 1** provides the lowest recognized coverage and good visibility.
- **Class 2** provides moderate body coverage and superior visibility.
- **Class 3** provides the greatest body coverage and visibility under poor light conditions and at great distance

.

2- Look at these safety garments and classify them according to their level of retro reflective performance in the chart below – Add other examples:

Baudrier
Classe 1

Blouson
Classe 2

Blouson
Classe 3

Combinaison
Classe 3

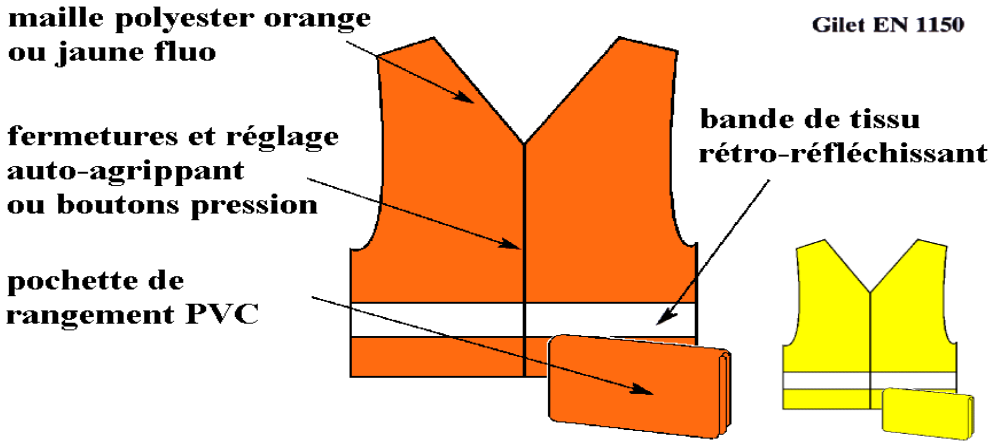
Pantalon + veste
Classe 3

	Matière fluorescente (rouge, jaune ou orange-rouge)	Bandes rétro-réfléchissantes
Classe 1	0.14 m²	0.10 m²
Classe 2	0.50 m²	0.13 m²
Classe 3	0.8 m²	0.20 m²

Examples

IV- The safety waistcoat

1- Oral exercise: Translate the different elements in English :



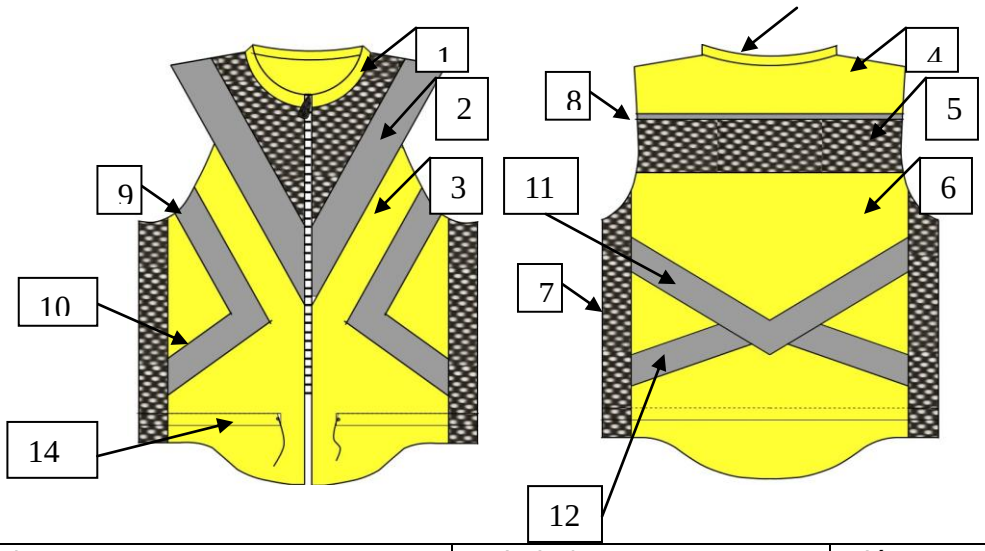
2- The specification sheet : the safety roller vest

a-Pair work : write the specification sheet of your roller vest in English : use the dictionary if necessary.

Fiche technique/ Technical Sheet

Produit /Item : Gilet/ Référence / reference:	Composition : Tissu 1/ fabric 1:	Tricot fluorescent 100% polyester (120 g/m²).
	Tissu 2/ fabric 2 :	Bandes rétro réfléchissantes 65% polyester 35% coton enduit élastomère et billes de verre (30 lavages max à 40°C).
	Tissu 3/Fabric 3 :	Maille filet 100% polyester (140 g/m²).
Code d'entretien/		Lavage à 40°, traitement mécanique réduit, essorage réduit Chlorage interdit Séchage en tambour interdit Repassage 110°C Nettoyage à sec interdit

Croquis/ **sketch** :



Fournitures/	Coloris /	Eléments du patronnage/
Tissu 1/	Jaune/	1-
Matière 2/	Argent/	2-
Matière 3/	Noir/	3-
Fil couture/	Jaune/	4-
Fil surpiqure/	Argent/	5-
Fermeture à glissière/	Noir/	6-
Cordon élastique/	Noir/	7-
Stoppeur/	Noir/	8-
Biais/	Noir/	9-
Vignette de composition/	Blanc/	10-
Puce taille/	Blanc/	11-
Etiquette d'entretien/	Blanc/	12-
Sachet plastique/	Transparent/	13-
		14-

Description/ **description :**

Séance 2- other technical fabrics

I- Smart and technical textiles: General definitions

1- **What are the differences between smart, technical and interactive textiles? Propose your own definitions :**

2- Think of some examples that could fit each group:

➔ Exchange with your classmates:

SMART TEXTILES	TECHNICAL TEXTILES	INTERACTIVE TEXTILES

3- The high-visibility jacket: Is it a smart, an interactive or a technical textile ?

➔ Discuss altogether

II- Group work: Oral presentation

1- Study your slide(s) so as to introduce its content to your classmates – Use a precise vocabulary and pay attention to your audience's understanding - Enrich your presentation with other examples

Groups	**Themes**
1	MICRO-ENCAPSULATION: slide 11
2	THERMOCHROMIC INKS: slide 12
3	PHOTOCHROMIC INKS + PHOSPHORESCENT INKS: slides 13, 14
4	TECHNICAL TEXTILES 1: slides 6, 7,8
5	INTERACTIVE TEXTILES 1: slide 15
6	INTERACTIVE TEXTILES 2: slide 16
7	TECHNICAL TEXTILES 2: slides 9, 10
8	NANOTECHNOLOGY: slide 17

2- Assessed questionnaire : After each presentation, answer the questions on the developed theme - Be as clear and precise as you can (Lexicon + Technologies)

MICRO-ENCAPSULATION:

1- What do the tiny bubbles or capsules contain? How are they activated**?**

2-What are the two main purposes of this technique?

3-Give examples of their end use for each purpose.

THERMOCHROMIC INKS

1-What do thermochromic inks react to? How do they react?

2-What is their purpose?

3-What are their limits/ weaknesses?

PHOTOCHROMIC INKS

1-What is the difference between thermochromic and photochromic inks?

2-Explain their purpose:

3- Explain briefly the functioning of phosphorescent materials:

INTERACTIVE TEXTILES- INTEGRATED WEARABLE ELECTRONICS

1-What is their principle?

2-What is the aim of wearable electronics in sportswear?

3-In which other fields are they used?

TECHNICAL TEXTILES

1- Explain the role of Kevlar

2-What kind of garments are moisture absorbing?

3- Give the name of a fabric used for a mountain anorak and list the proprieties

4- What is the concept of biomimetics fabric?

4- Define the functioning of the pressure response fabric

NANOTECHNOLOGY

1-For which hygienic purpose can you use nanotechnology?

2-Why are nanotechnologies a revolution in textiles?

III- Some proprieties of technical garments

For each outfit, find the proprieties – Exchange with your classmates

			
	 Collection “sans repassage”