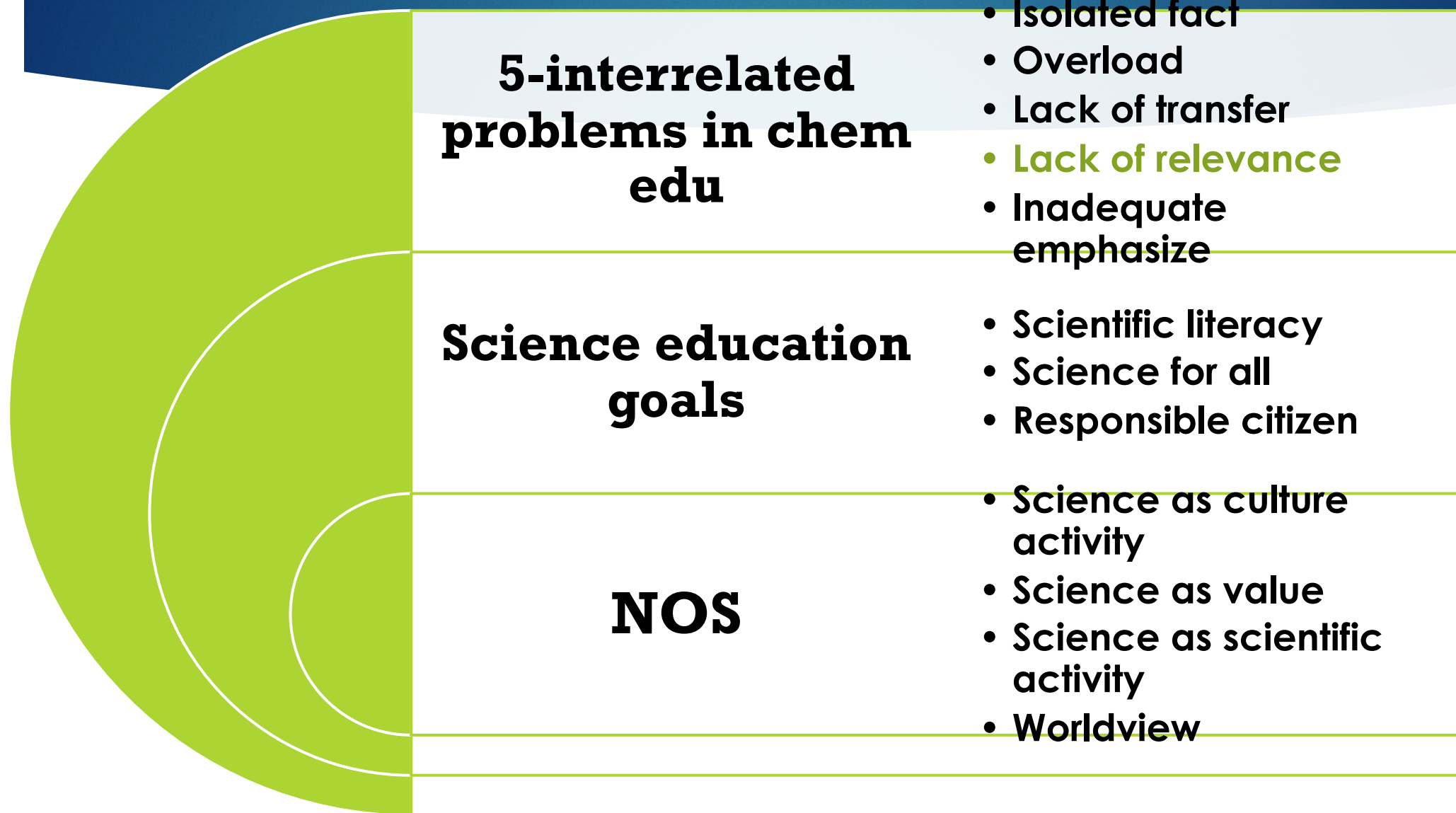




# Model of context-based learning

# WHY Context-based Chemistry Learning (CbCL)?

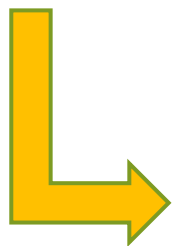


# WHAT is CbCL?

Context-based  
approach



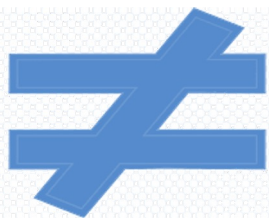
**Learning as context  
engagement**



Context-based  
learning



**Using the context during the  
learning process to develop  
the curiosity**



Contextual teaching  
and learning

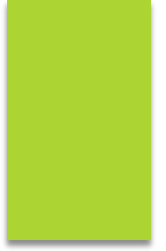




# A SUMMARY OF THE CONTEXT-BASED PROGRAMS IN SEVERAL COUNTRIES (Ultay & Calik, 2012)

| Context-based approach                  | Country | Age/level            | Description                                                                                                                                            |
|-----------------------------------------|---------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Salters Advanced Chemistry (SAC)</b> | UK      | 17–18 year olds      | SAC emphasizes industrial and real-life applications of chemistry                                                                                      |
| <b>Chemistry in Context</b>             | USA     | 18–20 year olds      | It focuses on a meaningful connection between students' learning of chemistry, and their daily life and societal issues                                |
| <b>ChemCom</b>                          | USA     | Upper secondary      | ChemCom integrates community issues to chemistry                                                                                                       |
| <b>Industrial Chemistry</b>             | Israel  | 12th grade           | Industrial Chemistry provides with the opportunity to describe the contexts of real situations and actual problems that exist in the chemical industry |
| <b>Chemie im Kontext (ChiK)</b>         | Germany | 10th and 11th grades | ChiK aims at the improvement of chemistry teaching at secondary school in Germany                                                                      |
| <b>Chemistry in The</b>                 | The     | Secondary            | Aims at creating meaningful connection                                                                                                                 |

# FRAMEWORK OF CbCL



- ☐ **Constructivistics (Social Cognitive/Vygotsky & Situated Learning Theory)**
- ☐ **Cognitive apprenticeship**
- ☐ **Concept development and Transfer**
- ☐ **Using a context with several models**
- ☐ **A sense of wonder and curiosity about natural world**
- ☐ **A 'need -to-know' principle in selecting content (subject matter)**
- ☐ **Students' engagement actively**
- ☐ **Learning environment**



# WHAT is CONTEXT?



A context is a focal event embedded in  
its cultural setting  
(Duranti & Goodwin, 1992, p. 3)

## Four Attributes of Contexts

- ❑ **SETTING OF FOCAL EVENT** (as a social, spatial, and temporal framework used by community) → science relevance concept
- ❑ **BEHAVIOURAL ENVIRONMENT** (to frame the talk, type the activity/action)
- ❑ **SPECIFIC LANGUAGE** (as the association between the focal event and scientific concepts)
- ❑ **EXTRA-SITUASIONAL BACKGROUND KNOWLEDGE** (the background knowledge that is required)

# FOUR MODELS OF CONTEXTS (Gilbert, 2006)

1

As the direct application of concept

2

As reciprocity between concepts and applications

3

As provided by personal mental activity

4

As the social circumstances

3 & 4  
are  
most  
Viable  
and  
Relevant

most effective and  
represent the basis for  
ideal of CbCL