GHS Jewels

Game idea

“GHS Jewels” presents labelling symbols for hazardous chemicals (these are the so-called hazard pictograms according to the Globally Harmonized System of classification and labeling of hazardous substances) and the fundamental principles of the measures for safe handling. For example, the game can be used at in-house action days or as a didactic support.

Rules of the game

The rules of the game are based on the usual Jewels/Bejeweled Games:

- Adjacent jewels are exchanged to form combinations of the same jewels. Possible combinations are:
  - 3 jewels in a row (horizontally and vertically)
  - 4 jewels in a row (horizontally and vertically)
  - 5 jewels around the corner and in T-shape
  - 5 jewels in a row (horizontally and vertically)
- They are only exchanged if a combination results, otherwise the jewels swap back to their original position.
- If the combinations are correct, the cells at the positions of the respective jewels change color.
- The game ends when either the time has expired or all cells have changed color.
- The player gets a bonus for each combinations and at the end of the game, the bonuses collected (and the remaining time) are converted into points.
- The jewels are selected either by drag & drop between two adjacent jewels or by clicking on one after the other.

Meaning of the game jewels - Hazard pictograms

For improved perceptibility, the pictograms are highlighted in color:

- **Yellow**: The “Corrosion” pictogram stands for chemicals that may cause severe skin burns or eye damage.
- **Green**: The ‘exclamation mark’ pictogram represent a warning about substances which irritate the skin, eyes or respiratory tract, have a narcotic effect, which are harmful if swallowed, if inhaled or in contact with skin which may cause allergic skin reactions.
- **Blue**: The “health hazard” pictogram denotes the following hazards: May cause cancer, genetic defects, may damage fertility or the unborn child, May cause damage to organs, May cause allergic reactions if inhaled, May be fatal if swallowed and enters airways.
• **White:** The "Skull and crossbones" pictogram indicates that even small quantities that are inhaled, swallowed or come into contact with the skin, can be fatal.

• **Red:** The "Flame" pictogram identifies flammable liquids, gases and solids as well as substances, which emit flammable gases in contact with water. Pyrophoric substances are also labeled with a “flame”.

**Meaning of the bonuses - measures on workplace health and safety (WHS)**

The overriding principle of workplace health and safety is the **substitution** of hazardous working materials by chemicals with less hazardous properties. In the game, as in real life, this is only possible in some cases.

• This is what the four-leaf clover stands for.

**Technical and organizational protective measures** are of most important practical significance. These are symbolized by:

• Circuit symbol: Use of hazardous substances in closed systems.
• Ventilation wheel: Extraction of hazardous substances, where possible at the source.
• Stop hand: Keep distance from places where hazardous substances are handled.
• Stopwatch: Working time limits for the handling of hazardous materials.

If technical and organizational protective measures cannot provide adequate protection, **personal protective equipment** must be worn as the last barrier where appropriate, for example:

• Safety goggles/glasses
• Safety helmet
• Safety gloves
• Safety shoes or boots
• Respiratory mask

The points for the premiums are resulting from the grading of the effectiveness of protective measures. 1:1 mapping of the measures to the hazard pictograms does not exist.

More information on the hazards, on the new labeling system according to GHS and concrete information on individual hazardous substances can be found at [www.gischem.de](http://www.gischem.de).